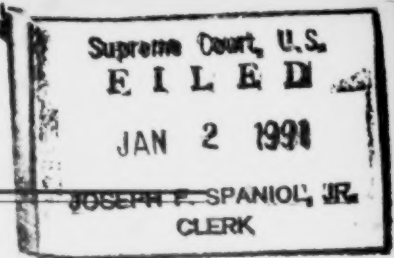


90-1049

(1)



No.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1990

JOHN H. BAKER, et al.,

Petitioners,

v.

**FEDERAL AVIATION ADMINISTRATION, and
JAMES B. BUSEY, Administrator,**

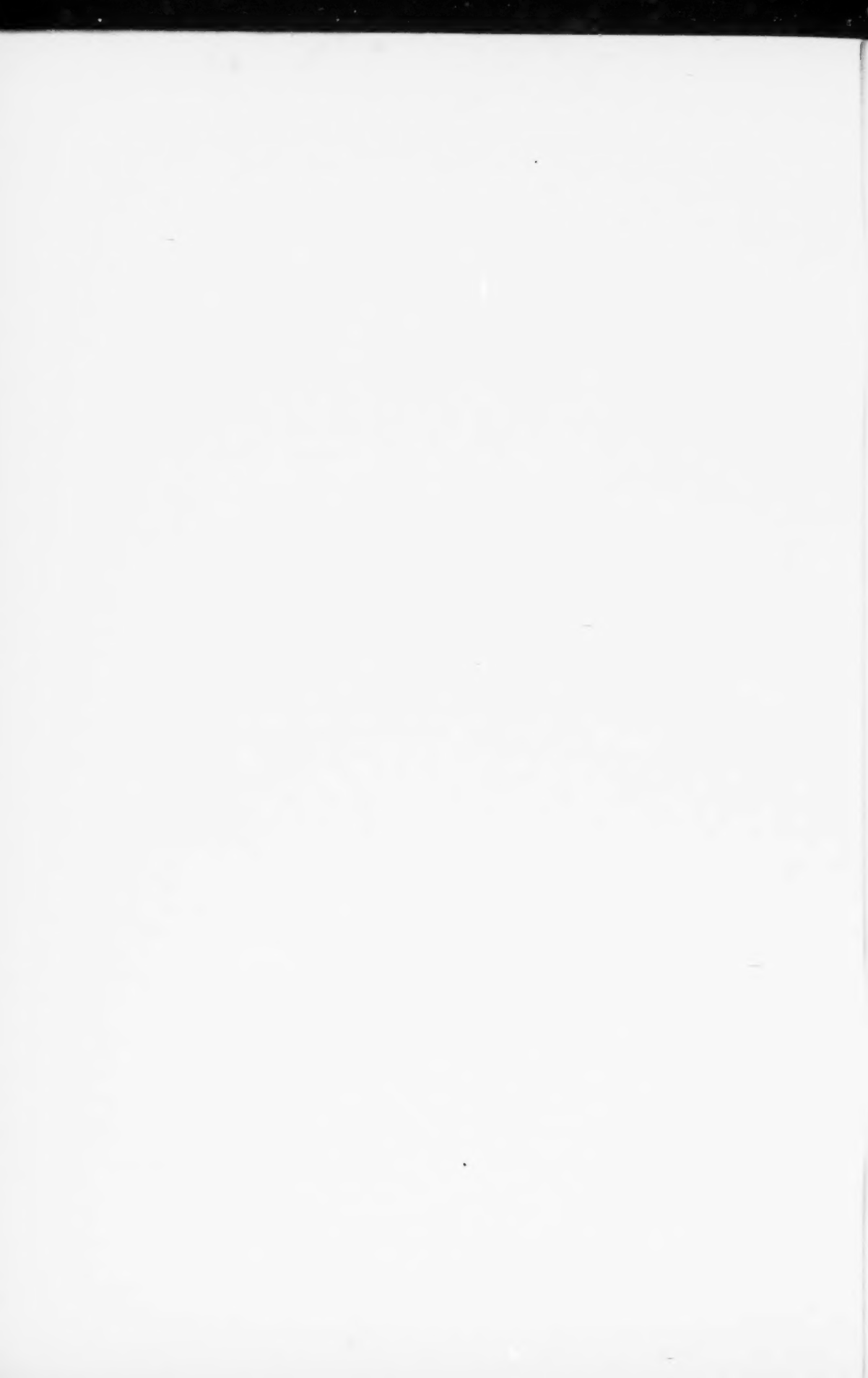
Respondents.

**PETITION FOR A WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT**

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QUESTIONS PRESENTED

1. Whether the FAA's thirty-year refusal to grant exemptions to its "Age 60 and Out" rule for airline pilots violates the Federal Aviation Act and agency regulations.
2. Whether the Court of Appeals' approval of the FAA's "no-exemption" policy for age sixty pilots, a policy inconsistent with the exemption standard for pilots under age sixty who are alcoholics and heart patients, is in conflict with decisions of other Courts of Appeals requiring agencies to apply consistent exemption standards.
3. Whether the FAA's refusal to weigh the safety and experience record of age sixty pilots against the serious public safety problems caused by pilot inexperience presents an issue of such importance under this nation's transportation policy that it should be settled by the Court.

LIST OF PARTIES

The parties in the Court of Appeals were John H. Baker, Courtney Y. Bennett, Robert S. Bos, John W. Chadick, Jack P. Chambers, Charles G. Criswell, Charles H. Deming, Burton E. Dezendorf, Herbert F. Ewald, Gerald G. Farrell, William A. Formato, Eugene W. Garges, Jr., Sylvester C. Iffert, James W. Keeling, Leon Lipsky, Walter M. Loflin, Robert A. Longwell, Don Lykins, Vincent J. Madden, Monroe G. Mathias, Henry L. Maxwell, Paul F. Moore, Richard P. Munger, Paul Pedersen, Philip J. Quimby, Herbert A. Riebeling, Duane E. Searle, Bernald S. Smith, John R. Steidl, and Edward B. Thompson as Petitioners; and James B. Busey, and Federal Aviation Administration, as Respondents.

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Petitioners,

v.

FEDERAL AVIATION ADMINISTRATION, and
JAMES B. BUSEY, Administrator,

Respondents.

**PETITION FOR A WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT**

Petitioners, John H. Baker, *et al.*, respectfully request that a Writ of Certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Seventh Circuit entered on October 31, 1990, affirming an order of the Federal Aviation Administration dated May 26, 1989.

OPINIONS BELOW

The opinion of the United States Court of Appeals for the Seventh Circuit, entered on October 31, 1990, is reported at 917 F.2d 318. It is reprinted in the Appendix hereto, p. 1a, *infra*.

The order of the Federal Aviation Administration dated May 26, 1989 is not reported. It is reprinted in the Appendix hereto, p. 21a, *infra*.

JURISDICTION

Petitioners filed petitions for exemption from the provisions of a rule of the Federal Aviation Administration (FAA) prohibiting airline pilots from service after age sixty ("age 60 rule"), 14 C.F.R. § 121.383(c), on June 3, 1986 and January 1988.

On May 26, 1989, the FAA entered an order denying the petitions. Pursuant to 49 U.S.C. App. § 1486(a), petitioners sought review of that order in the United States Court of Appeals for the Seventh Circuit. On October 31, 1990, the United States Court of Appeals for the Seventh Circuit affirmed the FAA's order (Will, J., dissenting). No petition for rehearing was sought.

The jurisdiction of this Court to review the judgment of the United States Court of Appeals for the Seventh Circuit is invoked under 28 U.S.C. § 1254(1).

STATUTE AND REGULATIONS INVOLVED

Section 121.383(c) of the Federal Aviation Regulations provides (14 C.F.R. § 121.383(c)):

No certificate holder may use the services of any person as a pilot on an airplane engaged in operations under this part if that person has reached his 60th birthday. No person may serve as a pilot on an airplane engaged in operations under this part if that person has reached his 60th birthday.

Section 601(c) of the Federal Aviation Act of 1958 provides (49 U.S.C. App. § 1421(c)):

The Secretary of Transportation from time to time may grant exemptions from the requirements of any rule or regulation prescribed under this subchapter if he finds that such action would be in the public interest.

Section 11.25 of the Federal Aviation Regulations provides (14 C.F.R. § 11.25):

Petitions for rule making or exemptions.

- (a) Any interested person may petition the Administrator to issue, amend, or repeal a rule whether or not it is a substantive rule within the meaning of § 11.21, or for a temporary or permanent exemption from any rule issued by the Federal Aviation Administration under statutory authority.
- (b) Each petition filed under this section must—

* * *

(5) Contain any information, views, or arguments available to the petitioner to support the action sought, the reasons why the granting of the request would be in the public interest and, if appropriate, in the case of an exemption, the reason why the exemption would not adversely affect safety or the action to be taken by the petitioner to provide a level of safety equal to that provided by the rule from which the exemption is sought.

Section 1006(a) of the Federal Aviation Act of 1958 provides (49 U.S.C. App. § 1486):

- (a) Orders subject to review; petition for review
Any order, affirmative or negative, issued by the Board or Secretary of Transportation under this chapter, except any order in respect of any foreign air carrier subject to the approval of the President as provided in section 1461 of this title, shall be subject to review by the courts of appeals of the United States or the United States Court of Appeals for the District of Columbia upon petition, filed within sixty days after the entry of such order, by any person disclosing a substantial interest in such order. After the ex-

piration of said sixty days a petition may be filed only by leave of court upon a showing of reasonable grounds for failure to file the petition theretofore.

STATEMENT OF THE CASE

The Federal Aviation Administration (FAA) has a rule which prohibits pilots from serving in airline operations if they have reached their sixtieth birthdays. The “age 60 rule,” 14 C.F.R. § 121.383(c), has been in effect since 1959, and no exception to the rule has ever been made.¹

This case had its genesis in a June 3, 1986 petition for exemptions from the age 60 rule filed with the agency by a group of highly experienced airline pilots on major air carriers. The FAA’s denial of the petition (order dated September 8, 1987) was the subject of a petition for review filed in the United States Court of Appeals for the Seventh Circuit. In 1988 the Seventh Circuit vacated the FAA’s order and remanded with instructions to the agency for further proceedings. *Aman v. FAA*, 856 F.2d 946 (1988). The court noted in its decision that FAA’s “progress in developing an understanding of the relationship between aging and flight performance has been disappointing.” *Id.* at 949. The court determined that while medical science could not screen out, with certainty, “all of the incremental risk . . . among pilots older than sixty,” the FAA had failed to conduct a “net risks” analysis and had

¹ The rule applies to pilots in air carrier operations, including cargo-only carriers like Federal Express. The FAA does not apply the rule to its own pilots or to NASA’s pilots, who operate high performance and commercial-type aircraft. Nor does the rule apply to air taxi or commuter pilots, corporate pilots, or pilots flying in “general aviation.”

“failed to set forth a sufficient factual or legal basis for its rejection of the petitioners’ claim that older pilots’ edge in experience offsets any undetected physical losses.” *Id.* at 952, 954, 957 (emphasis in original). The court also concluded that, under the applicable “substantial evidence” standard, the FAA had failed to provide any “statutory justification[]” for its refusal to grant exemptions to healthy and experienced age sixty pilots, in light of its frequent grant of “special” exemptions to younger pilots “otherwise disqualified by episodes of heart disease or alcoholism.” *Id.* at 957. The court stated that it was “essential” that FAA’s explanation of its refusal to grant any exemptions to its age 60 rule reconcile the agency’s “inconsistent determinations” in this regard in terms of its construction of its statutory responsibilities. *Id.*

On remand, after receipt of some 200 additional comments filed by industry experts, scientists, and physicians—all but a handful in strong opposition to the agency’s inflexible position—the FAA again denied the petition.² In its order dated May 26, 1989, the FAA dismissed petitioners’ showing that their experience far outweighed possible *undetected* age decrements, relying almost entirely on an unpublished 1983 report referred to below as the “Flight Time Study.” (J.A. 530) The agency described the report as supporting its position that, for pilots over age sixty, the accident risk in general aviation (not airline operations) increases “dramatically . . . with age” (66a)

FAA explained that it had granted “special” exemptions under the “functional equivalent of a second exemption mechanism,” *Aman* at 957, to over one thousand airline pilots who have been returned to air carrier duties despite

² The FAA had jurisdiction pursuant to 49 U.S.C. App. § 1421(c).

diagnoses of alcoholism, heart disease, myocardial infarction, bypass surgery, stroke, psychiatric disorders (including psychoses), neurologic defects, and diabetes. (68a) The agency asserted, however, that “their circumstances are not comparable with those of an individual who has reached” the “advanced age” of sixty, because for persons with “known disease, the prognosis for the disease can be assessed and specific tests or evaluations identified to monitor the condition.” (*Id.*) In its order, the FAA also asserted that, for the numerous medical and psychiatric disorders for which “special” exemptions are granted, the conditions could be “clearly identified,” and the agency had been “able to develop a means of assessment and surveillance specially designed to demonstrate the individual’s capabilities and to identify any adverse changes.” (*Id.*) The FAA concluded that such was not possible in the case of “aging,” since there are “no generally applicable medical tests that can . . . adequately determine which individual pilots are subject to incapacitation . . . or to more subtle adverse conditions” (69a)

Petitioners sought review of the FAA’s May 26, 1989 order in the Seventh Circuit Court of Appeals. In its decision dated October 31, 1990, the Court of Appeals affirmed the FAA’s order (Will, J., dissenting), but rejected the heart of its rationale. The majority below found “serious flaws” in the Flight Time Study because the report had collected data so as to “significantly understate[]” the accident rates for pilots under age sixty and overstate the rate for pilots over that age. (5a) Rather than support the agency’s position, the majority found that the Flight Time Study data instead could “be construed to support the petitioners’ claims” that, among the most experienced general aviation pilots (Class III) not affected by the statistical flaws inherent in the other pilot classes,

pilots over age sixty had the *lowest* accident rates. (6a) Moreover, the court concluded that the FAA, while touting the Flight Time Study, was aware of the fact that "various experts, even some from the FAA, state that the study should not be relied on as determinative—or even probative—on the question of the continued validity of the age sixty rule." (5a, n.1)

With regard to FAA's policy of granting large numbers of "special" exemptions to disabled or impaired airline pilots under age sixty, based on modern medical assessment and monitoring techniques, the majority below expressed strong doubts as to the adequacy of the agency's articulated explanation ("Exactly how this distinction applies as a practical matter is not entirely clear to us. . ."). (7a) Nonetheless, the court decided that it would "not require more of the FAA with respect to the consistency of restoring stricken younger pilots to duty while barring oldsters whose records are impeccable." (*Id.*)

The majority below acknowledged the "daunting" task petitioners faced, despite the "impressive expert opinion evidence" presented. (3a, 4a) It is, as the court acknowledged, "a Catch-22: from one perspective they cannot get exemptions until they show they can fly large passenger aircraft safely, and they cannot show they can fly such planes safely until they get exemptions." (7a-8a) The court concluded (9a):

Certainly the record abounds with testimonials by experts in both flying and medicine to the experience and judgment of the older aviator and the feasibility of assuring the good health and performance of this kind of pilot through frequent and sophisticated testing. We are certainly not in a position to say that the numerous supporters of the petitioners' case are wrong. And it is obvious that the FAA must continue and must enhance its efforts to accommodate

their points of view. At this time, however, we are not prepared to overrule the agency in a matter of such immense sensitivity as this one. The FAA should not take this as a signal that the age sixty rule is sacrosanct and untouchable. Obviously, there is a great body of opinion that the time has come to move on. The agency must give serious attention to this opinion.

In a vigorous dissent, Judge Will stated that, "rather than urging the FAA to recognize the need for keeping up with advanced technologies," he would vacate the FAA's order and remand: (1) for action to adopt regulations for the grant "of at least some exemptions"; (2) for a showing that pilots over age sixty are in fact significantly more prone to "sudden incapacitation"; and (3) for a reasoned and full explanation of the inconsistent exemption standards applied to "special" exemption applicants with manifest disease and age sixty applicants who are, based on medical testing, disease free. (17a, 18a) Judge Will observed, on this last point, that the FAA had "not offered any evidence to support this distinction between the special certificates it grants to younger pilots and its refusal even to promulgate-meaningful regulations and criteria for age exemptions for older pilots, much less to grant an age exemption to an older pilot." (15a) He noted:

Since the FAA has refused as a matter of policy to grant any exemptions, what the FAA and the majority are holding, in effect, is that *every* airline pilot, on his or her 60th birthday, and regardless of physical condition or experience, becomes a significantly greater safety hazard than before, even though, just one day before, he or she was FAA certified, qualified and safe. The evidence in this case does not warrant that conclusion. Nor does everyday, ordinary good old common sense.

(17a; emphasis in original)

REASONS FOR GRANTING THE WRIT

I. FAA's Thirty-Year Policy Of No Exemptions To Its "Age 60 Rule" Violates The Federal Aviation Act And The Agency's Regulations.

In enacting the Federal Aviation Act of 1958, 49 U.S.C. App. §§ 1301 *et seq.*, Congress plainly contemplated that the agency would grant exemptions to its rules and regulations in the "public interest." 49 U.S.C. App. § 1421(c). The congressional committee responsible for the bill which became law observed, in 1958, that the FAA's regulations must be "modified or repealed to meet changing conditions. Rulemaking processes should not lag far behind advances in equipment and techniques." H.R. REP. NO. 2360, 85th Cong., 2d Sess. (1958), *reprinted in* 1958 U.S. CODE CONG. & ADMIN. NEWS 3741, 3747.

The FAA's regulations provide for the grant of exemptions from "any rule" so long as the exemption does not "adversely affect safety" and provides a "level of safety equal to that provided by the rule from which the exemption is sought." 14 C.F.R. § 11.25. The agency's stubborn refusal to grant a single exemption in thirty years is at odds with the "expectation by Congress that *some* exemptions will be granted." *Starr v. FAA*, 589 F.2d 307, 311 (7th Cir. 1978) (emphasis in original). It also is inconsistent with the enormous advances since 1959 in medical technology, health status detection and monitoring techniques, pilot proficiency measurements and training using advanced cockpit simulators, improved health and health awareness in the public at large and in the highly regulated and monitored airline pilot population, and the well-established increases in life expectancy, fitness, and activity among the population over sixty years of age.

Although the record below documented dramatic changes in the state of the art in medicine and pilot performance evaluation techniques since 1959, the FAA has breached its commitment to explore and pursue a more flexible alternative to the age 60 rule. Instead, the record reflects the agency's intransigence and inaction in altogether failing to study or explore the feasibility of granting exemptions to individual airline pilots over sixty years of age.

It is necessary for this Court to resolve this issue because the hope held out by the Seventh Circuit's 1978 decision in *Starr* will otherwise be extinguished. The *Starr* court held that pilots could obtain relief from the rule in the future if they could show that FAA was "blindly adhering to an outdated rule" or engaging in a "[d]eliberate disregard of new advances in medical testing standards." 589 F.2d at 312, 314. Twelve years have passed since *Starr*, but despite the finding that the FAA's progress in exploring alternatives to a rigid no-exemption policy has been "disappointing" (*Aman* at 949), and the warning to the agency that the age 60 rule should not be considered "sacrosanct" (9a), the majority below refused to require the agency to do more. (7a)

The Court of Appeals effectively shut the door on future exemption requests and abdicated its judicial review function. This is nowhere more apparent than in its approval of FAA's articulated two-part exemption standard: *First*, airline pilots approaching age sixty must present "a *totally* reliable test or group of tests which would reveal *with certainty* any general deterioration of piloting skills associated with advancing age." (emphasis supplied) *Second*, the pilots must also "show they can fly large passenger aircraft safely . . . [by means of] a valid statistical demonstration of comparative safety records . . . in the same kinds of flying." (7a-8a)

Medical science will never fashion a "totally reliable test" that detects all conditions "with certainty." This requirement now approved by the Court of Appeals has never been the FAA-required standard for qualification as a pilot at any age. Under the Federal Aviation Act, while the FAA has the responsibility to consider the duty of air carriers to "perform their services in the highest possible degree of safety," that responsibility does not establish a requirement of "certainty" or absolute predictability as a regulatory standard. In *Nader v. FAA*, 440 F.2d 292, 293 (D.C. Cir. 1971), the court upheld the FAA's refusal to impose a no-smoking ban on airline flights, despite the fire and smoke risk. The court noted that the agency's regulatory obligations did not require it to "exclude all possibility of hazard." *Id.* at 294. Although the "hazard of combustion rises in some measure as the number of ignitors rises," the FAA's refusal to act was reasonable because the risk was "too small." *Id.* at 294, 295.

Similarly, pilots' ability to prove they can fly as safely after age sixty as the day before is, as the majority below recognized, "a Catch-22," because pilots "cannot get exemptions until they can show they can fly large passenger aircraft safely, and they cannot show they can fly such planes safely until they get exemptions." (7a-8a)

The FAA's creation of an exemption standard so onerous that it can never be met flows from its implicit contention that its authority to grant or deny exemptions under 49 U.S.C. App. § 1421(c) is part of an unreviewable delegation of power from Congress. This is contrary to law. In enacting the Federal Aviation Act, Congress stated its intention that the FAA's power should "be exercised in accordance with constitutional and statutory safeguards applicable to other agencies of the Government that have been granted similar rulemaking authority. . . ." H.R.

REP. NO. 2360, 85th Cong., 2d Sess., *reprinted in* 1958 U.S. CODE CONG. & ADMIN. NEWS 3741, 3747. Contrary to FAA's rigid position on age sixty exemptions, the spirit of the Act is "flexibility," to enable the FAA to "respond to changing circumstances in aviation. . . ." *United States v. Eastern Air Lines, Inc.*, 792 F.2d 1560, 1562-63 (11th Cir. 1986).

An agency's discretion to enforce general rules is "intimately linked to the existence of a safety valve procedure for consideration of an application for exemption based on special circumstances." *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969). This "safety valve" provided by the grant of exemptions permits, through judicious flexibility, a "more rigorous adherence to an effective regulation." *Id.* at 1159.

The availability of appropriate relief by exemption from a rule has constitutional underpinnings. "If [a] . . . regulation stood alone with no provision for relief from its rather drastic commands, no matter what the circumstances, we would have grave doubt of its constitutionality vis-a-vis the Fifth Amendment's requirement of due process." *Community Serv., Inc. v. United States*, 418 F.2d 709, 711-12 (6th Cir. 1969). "[A]n effective waiver mechanism," therefore, "may be necessary to assure that the . . . rule affords due process. . . ." *Southwest Pennsylvania Cable TV, Inc. v. FCC*, 514 F.2d 1343, 1347 (D.C. Cir. 1975).

Not only is the FAA's interpretation of its congressional grant contrary to the Federal Aviation Act, but its construction of its mandate as permitting the maintenance of a "no-exemption" policy for thirty years is contrary to the teachings of this Court. In *American Trucking Associations, Inc. v. Atchison, Topeka, & Santa Fe Ry. Co.*, 387 U.S. 397, 416 (1967), the Court approved an agency's

alteration of “past interpretation” and the “overturn of past administrative rulings and practice,” stating:

[T]his kind of flexibility and adaptability to changing needs and patterns of transportation is an essential part of the office of a regulatory agency. Regulatory agencies do not establish rules of conduct to last forever; they are supposed, within the limits of the law and of fair and prudent administration, to adapt their rules and practices to the Nation's needs in a volatile, changing economy. They are neither required nor supposed to regulate the present and the future within the inflexible limits of yesterday.

The majority below warned the FAA that “there is a great body of opinion that the time has come to move on” and that the “agency must give serious attention to this opinion (9a),” even while it approved the agency's “no exemption” policy. In doing so, the Court of Appeals ignored this Court's warning that lower courts “must not ‘rubber stamp . . . administrative decisions that they deem inconsistent with a statutory mandate or that frustrate the congressional policy underlying a statute.’ ” *Bureau of Alcohol, Tobacco & Firearms v. Federal Labor Relations Auth.*, 464 U.S. 89, 97 (1983), (quoting *NLRB v. Brown*, 380 U.S. 278, 291-92 (1965)). Since Congress's expectation was that at least some exemptions would be granted, the FAA's “Catch-22” exemption standard which forecloses exemptions is not “consistent with the congressional purpose,” *Morton v. Ruiz*, 415 U.S. 199, 235 (1974). To the extent the agency's regulations appear to provide that at least some exemptions may be granted, they are a “fraud.” (Will, J., 18a)

II. The Court Should Resolve The Conflict Among The Courts Of Appeals As To Whether The Deference Owed To The Federal Aviation Administration Provides It With A License To Issue Inconsistent Determinations.

The decision in this case is in conflict with *Airmark Corp. v. FAA*, 758 F.2d 685 (D.C. Cir. 1985), and decisions in other circuits. In *Airmark*, the Court of Appeals for the District of Columbia Circuit held that the FAA's "complete failure to apply consistent criteria in granting or denying exemptions" required remand. *Id.* at 687. The court explained that while the agency had broad discretion in determining the public interest, it could not exercise that discretion arbitrarily. Any deference to which the agency was entitled was not a "license to . . . treat like cases differently," or to apply "different decisional criteria." *Id.* at 691, 692. On the contrary, the FAA had "no choice but to apply the same criteria to all. . . ." *Id.* at 691. Other courts have uniformly approved the *Airmark* standard.³

The *Aman* court cited with approval the *Airmark* standard, 856 F.2d at 957, ordering that, in light of the FAA's "increased willingness in recent years" to issue "special" exemptions to airline pilots "otherwise disqualified by

³ See also *Capitol Technical Servs., Inc. v. FAA*, 791 F.2d 964, 967 (D.C. Cir. 1986). *Accord United States v. Diapulse Corp. of Am.*, 748 F.2d 56, 62 (2d Cir. 1984) ("agency may not grant to one person the right to do that which it denies to another similarly situated"); *Contractors Transp. Corp. v. United States*, 537 F.2d 1160, 1162 (4th Cir. 1976) ("inconsistent application of agency standards"); *Frozen Food Express, Inc. v. United States*, 535 F.2d 877, 880 (5th Cir. 1976) (consistency from the government is required); *Independent Air, Inc. v. Department of Transp.*, 767 F.2d 1488, 1491 (11th Cir. 1985) (must apply exemption factors in a "consistent manner").

episodes of heart disease or alcoholism” (see 14 C.F.R. § 67.19), the agency provide a reasoned explanation as to its interpretation of the statutory exemption standard. *Aman* at 957. The FAA’s response to the remand instructions was, as shown above, to: (1) misrepresent the findings of the “Flight Time Study,” which the FAA was told was not “determinative—or even probative—” on the question of continued validity of the age 60 rule (5a, n.1); (2) ignore altogether the *Aman* court’s request for the agency’s interpretation of the statutory exemption standard; and (3) defend its grant of “special” exemptions to pilots with known pathology on the ground that it knows and can predict more about diseased airline pilots than it knows or can predict about apparently healthy aging pilots who have reached their sixtieth birthdays.⁴

Departing from *Aman*, *Airmark*, and decisions in the Second, Fourth, Fifth, and Eleventh Circuits, the majority below failed to insist on a credible explanation from the agency, apparently accepting the FAA’s statement that it could better evaluate a pilot with known disease—even if chronic, progressive and likely to recur—than an age sixty pilot without disease. But as Judge Will noted in dissent, there is “no citation, either in FAA’s brief or its latest order, for the proposition that the symptoms of alcoholism, drug abuse, and heart disease can be monitored more closely and reliably than the ‘decrements’ of aging.” (15a) And while the majority below concluded that FAA’s explanation for the distinction was “not entirely clear,” it decided that it would “not require more of the FAA.” (7a) This determination was squarely at odds with

⁴ FAA failed to address the fact that significant numbers of pilots with “special” exemptions for medical defects have been subsequently grounded due to a relapse or recurrence of their condition.

an agency's obligation "to provide petitioner with an explanation for the difference in their treatment . . ." *Marco Sales Co. v. FTC*, 453 F.2d 1, 7 (2d Cir. 1971).

The FAA's rule forbids disease-free pilots over age sixty from continuing their service as airline pilots because they might develop diseases of the heart, brain, or organ systems. At the same time, the agency permits pilots with these same diseases to fly if they are under age sixty. FAA's wholly inadequate explanation for granting "special" exemptions to impaired pilots under age sixty while denying exemptions to unimpaired medically screened pilots over age sixty highlighted its inconsistent application of the exemption standard and its failure "to adhere to its own precedents." *Local 32, Am. Fed'n of Government Employees v. Federal Labor Relations Auth.*, 774 F.2d 498, 502 (D.C. Cir. 1985).

By permitting an exemption standard which allows disabled airline pilots under age sixty to fly while grounding all healthy pilots over age sixty, the Seventh Circuit's decision is squarely in conflict with the law in other circuits because it institutionalized an inconsistent exemption standard and uneven regulatory policy. The petition for a writ of certiorari should be granted to require the FAA to "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)).

As Judge Will stated in dissent:

The FAA, however, has not offered any evidence to support this distinction between the special certificates it grants to younger pilots and its refusal even to promulgate meaningful regulations and criteria for

age exemptions for older pilots, much less to grant an age exemption to an older pilot. . . . We defer to agency expertise, where expertise has been demonstrated, but "deference should not be equated with a license to issue inconsistent determinations." *Aman*, 856 F.2d 957. The pilots have plausibly alleged that the FAA's distinctions and exemption practices are inconsistent. The FAA has only answered with unsupported and unconvincing assertions.

(15a)

III. The FAA's Refusal To Grant Age-60 Exemptions Or Adopt Standards Governing The Grant Of Exemptions Is Inconsistent With National Transportation Policy And Raises Important Questions Of Federal Law.

The age sixty rule is perhaps the last vestige of government-sponsored age discrimination directed toward private employment.⁵ The "tortured" history of the rule is sum-

⁵ The majority opinion recognized that age discrimination "may form a dimension of the issue" (3a) The FAA's no-exemption policy is in conflict with the purpose of the Age Discrimination in Employment Act (ADEA) "to promote employment of older persons based on their ability rather than age [and] to prohibit arbitrary age discrimination in employment." 29 U.S.C. § 621(b). In *Trans World Airlines, Inc. v. Thurston*, 469 U.S. 111, 123 n.17 (1985), this Court noted that the airline pilot respondents sought to continue after age 60 as flight engineers, not pilots, and were not then challenging the age 60 rule itself. The Court left open the issue whether the FAA rule violated the ADEA, observing that the "EEOC guidelines . . . do not list the FAA's age-60 rule as an example of a BFOQ because the EEOC wishes to avoid any appearance that it endorses the rule. 29 C.F.R. § 1625 (1984)." That same term the Court unanimously held, in a case involving airline pilots requesting to serve as flight engineers after age sixty, that Congress when enacting the ADEA expressed a strong "preference for individual evaluation." *Western Air Lines, Inc. v. Criswell*, 472 U.S. 400, 422 (1985).

marized in *Aman*, 856 F.2d at 947-48. (See 2a) Since 1959 numerous pilots have petitioned unsuccessfully for individual exemptions from the FAA's rigid enforcement of the rule. Despite thirty years of "continuous controversy," *Aman* at 948, the FAA "has never granted an exemption—to anyone, regardless of his or her physical qualifications or experience." (Will, J., dissenting) (11a)

Petitioners supplied a virtual mountain of evidence in support of their position that the time has arrived for a more enlightened approach to the issue, including:

- extensive individualized medical/neuropsychiatric test results and reports for each petitioner, in accordance with a specially designed "Age Sixty Exemption Protocol." These exhaustive examinations were far more detailed than FAA's regular requirements for airline pilots and attested to petitioners' excellent health and neuropsychologic fitness (J.A. 6);
- a report by a distinguished panel of nationally recognized experts "with impressive qualifications in the fields of cardiology, aerospace medicine and neuropsychology," *Aman* at 949, concluding that the petitioners' "successful completion of their medical protocol was sufficient, in combination with operational tests imposed by the FAA and the airlines, to evaluate airline pilots over sixty years of age" (J.A. 1-4);
- 330 comments filed in the public docket from physicians, scientists, pilot organizations, flight instructors, FAA check pilots, and airline management pilots, strongly supporting the grant of exemptions from the rule. (FAA Pub. Dkts. 25008 and 25524) Only one physician, representing an industry group, supported the no-exemption policy. All 70 comments from airline check and instructor pilots opposed FAA's refusal to consider exemp-

tions. Included among the scientific comments were the strong support from the Director of the National Institute on Aging, National Institutes of Health (J.A. 182, 228), and comments from the now-retired medical directors of United, TWA, and Northwest Airlines. As TWA's Dr. Charles Gullett concluded, "With today's tools and medical knowledge, it is readily possible to evaluate and select from those over 60 with acceptable risk levels. . . . I have never heard an argument that seasoned experience does not contribute to flight safety. Therefore, the exemption of these qualified and experienced pilots from the current 'Age 60 Rule' will enhance flight safety rather than just offset an increased health risk. . . ." (J.A. 481-83)

The *Aman* court directed the FAA to conduct a "net risks" analysis and provide a "sufficient . . . basis for its rejection of the petitioners' claim that older pilots' edge in experience offsets any undetected physical losses," and to explain its inconsistent exemption standards for healthy age sixty pilots and diseased pilots under age sixty. 856 F.2d 952, 957. As explained above, the FAA's response was based almost entirely on the Flight Time Study, which the agency knew was substantially flawed. (5a) The majority below, however, declined to require adherence to the *Aman* remand instructions because the matter was of "such immense sensitivity." (9a)

In refusing to require the FAA to comply with the governing statute and regulations, and in permitting the agency to essentially ignore the court's remand instructions, the majority below abdicated its judicial responsibility and created a new rule of law that an agency may defy the law and the courts whenever a matter is of "immense sensitivity." (9a) The public interest and our nation's transportation policy deserve more.

The record below contained extensive evidence of the safety implications of pilot inexperience, including: (1) a National Transportation Safety Board (NTSB) analysis stating that of the 13,739 aircraft accidents occurring from 1983 to 1988, a total of 926 were attributed to "pilot inexperience" as a cause or factor; (2) reports of several fatal airline accidents attributed to pilot inexperience, most notably a 1988 Continental Airlines crash in Denver in which pilot inexperience played an important role (J.A. 245-47), and a 1982 Air Florida collision with the 14th Street Bridge in Washington, D.C. (pilots ages 31 and 34) in which lack of experience in freezing weather conditions was an important factor. (J.A. 252, 259, 265)

The impact of diminishing levels of airline pilot experience has become even more acute in recent years. As the NTSB observed in September 1988:

The rapid growth of the aviation industry at a time when fewer experienced pilots are in the workforce has reduced the opportunity for a pilot to accumulate experience before progressing to a position of greater responsibility. This loss of "seasoning" has led to the assignment of pilots who may not be operationally mature to positions previously occupied by highly experienced pilots.

(J.A. 246). The FAA has since urged airlines to "avoid assigning two relatively inexperienced pilots to the same flight" (J.A. 316, 319, 246; 39a), but has failed to increase the margin of safety by continuing the service of the safest, most experienced pilots.

While pilot inexperience has caused airline accidents, senior experienced pilots have averted them. Seventy airline check pilots, instructor pilots, and management pilots filed uncontroverted comments in the record, describing the tremendous value of experience, judgment, and matur-

ity possessed by pilots approaching age sixty. The majority below also recounted the "heroic deeds" of United Airlines Captain David Cronin, whose 38 years of experience saved a seriously damaged aircraft over the Pacific. (3a) As former FAA Administrator Donald D. Engen stated, "when push comes to shove, when everything turns to worms, experience is what really counts." (J.A. 276)

The FAA discounted the "heroic deeds" (3a) of Captain Cronin and those of Captain Al Haynes (Sioux City, Iowa in crippled DC-10) as only "isolated commendable acts." (47a, 50a) While not disputing that airline expansion and the age 60 rule have caused an almost unprecedented demand for new pilots, with attendant reduction in cockpit experience levels, the FAA stated that the retention of qualified pilots after age sixty would only temporarily defer the severity of the pilot shortage. (44a)

The issues of national importance posed by this case and its predecessors,⁶ but which have never been considered by this Court, are: (1) whether the FAA's maintenance of a no-exemption policy for 30 years comports with its statutory mandate to regulate in the interest of safety and to grant exemptions "from time to time . . . in the public interest," and (2) how long the FAA may retain the rule without exemption in the absence of meaningful evaluation in light of modern medical knowledge. In these rapidly changing times of deregulation and airline expansion, when major airlines are hiring pilots with reduced

⁶ See *Air Line Pilots Ass'n, Int'l. v. Quesada*, 276 F.2d 892 (2d Cir. 1960), *cert. denied*, 366 U.S. 962 (1961); *O'Donnell v. Shaffer*, 491 F.2d 59 (D.C. Cir. 1974); *Keating v. FAA*, 610 F.2d 611 (9th Cir. 1979); *Gray v. FAA*, 594 F.2d 793 (10th Cir. 1979); *Rombough v. FAA*, 594 F.2d 893 (2d Cir. 1979); and *Starr v. FAA*, 589 F.2d 307 (7th Cir. 1978).

levels of experience and then promoting them rapidly to captain positions, the forced retirement of airline pilots at age sixty reduces average cockpit experience levels by removing highly skilled and experienced age sixty pilots, many with thirty or more years of experience, and replacing them with relatively inexperienced new-hires.

CONCLUSION

For these reasons, a writ of certiorari should be issued to review the opinion and judgment of the Seventh Circuit.

December 1990

Respectfully submitted,

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Supreme Court, U.S.
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IN THE

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OCTOBER TERM, 1990

JOHN H. BAKER, *et al.*,

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v.

FEDERAL AVIATION ADMINISTRATION, and
JAMES B. BUSEY, Administrator,

Respondents.

APPENDIX TO PETITION FOR A WRIT OF
CERTIORARI TO THE UNITED STATES COURT
OF APPEALS FOR THE SEVENTH CIRCUIT

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—1a—

IN THE
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No. 89-2524

JOHN H. BAKER, et al.,

Petitioners,

v.

FEDERAL AVIATION ADMINISTRATION, and
JAMES B. BUSEY, Administrator,

Respondents.

Petition for Review of an Order
of the Federal Aviation Administration

ARGUED MAY 7, 1990—DECIDED OCTOBER 31, 1990

Before BAUER, *Chief Judge*, CUDAHY, *Circuit Judge*,
and WILL, *Senior District Judge*.*

CUDAHY, *Circuit Judge*. In 1988, this court decided *Aman v. Federal Aviation Administration*, 856 F.2d 946 (7th Cir. 1988) (*Aman I*), in which current and former airline captains sought review under 49 U.S.C. § 1486(a) of a Federal Aviation Administration (FAA) order denying a petition for exemptions from FAA regulation § 121.383(c) (the “age sixty rule”). The age sixty rule prohibits flights under Part 121 of FAA regulations, including commercial

* The Honorable Hubert L. Will, Senior District Judge for the Northern District of Illinois, sitting by designation.

flights of aircraft seating more than thirty passengers, from taking off under the command of pilots age sixty or older. See 14 C.F.R. §§ 121.1, 121.383(c). While the FAA is empowered to grant exemptions to this rule if it “finds that such action would be in the public interest,” see 49 U.S.C. § 1421(c) (the public interest standard), no exemptions have ever been granted.

After recounting the age sixty rule’s tortured thirty year history and establishing the appropriate “substantial evidence” standard of review, this court in *Aman I* carefully demarcated petitioners’ two claims. The first was that pilots, age sixty or older, meeting petitioners’ proposed battery of physical and psychological tests (the protocol), were no more likely to cause accidents due to sudden incapacitation or undetected deterioration of piloting skills than other pilots. The FAA rejected this claim, finding that it was not in the public interest to grant exemptions when petitioners’ protocol did not surely reduce *all* incremental risks associated with the aging process. Although this court noted that it might well have concluded otherwise as a matter of first impression, it held that substantial evidence supported the FAA’s finding.

Petitioners’ second claim was that the flying experience gained by allowing pilots age sixty and older to fly offset any increased risk of accident due to sudden incapacitation or skill deterioration, and that granting limited exemptions effectively produced a net increase or, at least, no net decline in safety. The FAA summarily rejected this claim. Unsatisfied with the agency’s cursory treatment, this court vacated the FAA order and remanded the matter to the agency for further proceedings.

On remand, the FAA again refused to grant exemptions, and an order to that effect is presently before us for review. After considering the FAA’s new order and both parties’ somewhat flawed evidence, we cannot justify a conclusion that, on average, experience sufficiently offsets possible age-related impairment of health or skills to clearly guarantee a net constancy or increase in safety. Accordingly, we affirm.

I.

While substantial evidence must support the FAA's decision, see *Aman I*, 856 F.2d at 951-52, petitioners have the burden of showing that circumstances justify exemptions from the age sixty rule, especially given the FAA's discretionary authority to act in this area. *Starr v. FAA*, 589 F.2d 307, 311 (7th Cir. 1978). It is a heavy burden here involving obviously daunting problems of public safety. Age discrimination may form a dimension of the issue, but safety is the dominant and controlling consideration. The fact that it is apparently very difficult to demonstrate any clear conclusion with respect to the trade-off between experience and possible age-related impairment makes the task extremely onerous for the bearer of the burden of persuasion.

Petitioners have presented anecdotal evidence of superannuated pilots performing heroic deeds. Consider, for example, Captain David Cronin, who at age 59, on his second to last scheduled flight, heroically landed a Boeing 747 en route from Honolulu, Hawaii to Auckland, New Zealand after a forward cargo door blew open 17 minutes after take off, opening a huge hole in the side of the plane. After two of the plane's four engines became disabled, Captain Cronin consulted emergency operating procedures which directed him to dive, reduce speed and drop the landing gear. However, 38 years of experience told him that, if that course were followed, the plane would lose too much altitude given its weight and multiple emergency situation. Captain Cronin instead operated many of the controls manually, constantly readjusting his speed and altitude calculations. With the exception of the nine passengers killed when the cargo door blew off, Cronin saved the lives of all passengers and crew aboard, safely landing the disabled plane at a much higher than normal speed. Pet. Ex. 105, 105A, 106, J.A. 278-80. In an appropriate context, we might give considerably more weight to the "anecdotal" evidence of pilots in their late fifties immediately before retirement performing amazing feats of

airmanship than presumably would the FAA. As noted at oral argument, were the passengers of Flight 811 asked whether their Captain Cronin should be permitted to continue flying beyond the mandatory retirement age of sixty, few could doubt their answer. Nor are we in a position to say they would be incorrect. In the case before us, however, it is apparently not pilots who have performed aeronautical miracles who have sought exemptions, and we need not consider the arguable entitlement of such "special" pilots to exemptions from the age sixty rule.

While petitioners have thus made some suggestive anecdotal showings and presented impressive expert opinion evidence, they have been unable to develop a persuasive statistical record comparing average risks for pilots in various relevant age categories. Petitioners, relying on figures from the National Transportation Safety Board, presented evidence that pilots age sixty and older had a lower accident rate per 1,000 pilots than pilots in other age groups. Pet. Ex. 71, 72, J.A. 215-16. This evidence, however, failed to account for exposure to risk in terms of hours of flight time. Thus, a pilot who had flown only a relatively few hours in a year and therefore incurred only a reduced risk of accident would carry the same weight as a pilot who flew many hundreds of hours with their greater attendant risks. R. 5; R. 103. Such a study is, of course, of questionable value. In addition, no analysis indicated whether the difference in accident experience by age group was statistically significant, a sort of failure specifically criticized in *Aman I*. 856 F.2d at 955. Petitioners also presented evidence that allowing pilots, sixty or older, to fly would increase crew experience on the average, but failed to show with any rigor that there was a significant lack of pilot experience in need of correction.

This is not to say that the FAA's evidence was any more persuasive. The agency relied heavily on an accident experience report by age category referred to as the Flight Time Study. Like petitioners' studies this report

has serious flaws.¹ Perhaps the Flight Time Study's greatest failing is that the data for pilots under age sixty include millions of relatively safe air carrier miles flown, miles which because of the age sixty rule were unavailable to pilots over sixty.² In calculating the accident rate for pilots sixty and older, the Flight Time Study divides the number of general aviation accidents by general aviation flight time, the only category open to this group. But for pilots under age sixty, the study divides the number of general aviation accidents by general aviation flight time and, in addition, air carrier operations flight time. Because miles flown in air carrier operations are nearly accident free, and millions of these extra miles are included in the figures for younger pilots but not for older ones, the accident rate for all pilots under age sixty is significantly understated compared to the rate for older pilots, whose accident rate is overstated. Indeed, looking at the Flight Time Study's chart of accident risk for Class I (airline transport) and Class II (commercial) pilots with greater than 5,000 hours total flight time (Pet. App. 42, Fig. 7), the jump in accidents at age sixty to sixty-nine from age fifty to fifty-nine simply looks too large to be credible.³

¹ Petitioners point out that the Flight Time Study is not even relevant since that study, as originally presented seven years ago, was based on data from 1976 to 1980 and was never intended to justify the age sixty rule. Numerous comments of record from various experts, even some from the FAA, state that the study should not be relied on as determinative—or even probative—on the question of the continued validity of the age sixty rule. As discussed *infra*, even if the study is relevant, it is only of very limited usefulness.

² This vast discrepancy in flight exposure for the group studied is one reason the petitioners presented figures on a per-pilot basis without reference to hours flown.

³ The chart which shows petitioners' attempt to recalculate these numbers and correct for the safe miles unavailable to pilots over age sixty appears to err in exactly the opposite direction. Pet. Br. at 17. Again, neither party performed statistical analysis which would indicate whether the differences were significant.

Even without correcting the Flight Time Study for this disparity in types of current flight hours, the FAA's own study on its face may in some aspects be construed to support the petitioners' claims, the raw data supporting a number of different possible conclusions. Consider, for example, the data showing accident rates as a function of both total and recent flight time for Class III pilots (general aviation and student). These data indicate that pilots age 60-69 (even 70 and over) with more than 1,000 hours total flight time and more than 50 hours recent flight time apparently have two of the lowest accident rates of any age groups of pilots in Class III having various indicated combinations of total and recent flight time. These comparisons apply, of course, even with respect to younger pilots in their thirties and forties, whose safety qualifications are generally unquestioned. Flight Time Study, J.A. 551, Fig. 9, J.A. 575-79, 809. More than 1000 hours total flight time and more than 50 hours recent flight time might be a telling statistic if the FAA could, for example, condition exemptions on total and recent flight time. Safety would be advanced, presumably, if the FAA required pilots to have at least a total of 1,000 flight hours and at least 50 recent flight hours as a condition for exemption.⁴

Another arguable flaw in the Flight Time Study is that all pilots in a ten-year age cohort are combined into a single statistic. Thus, a single point represents pilots aged sixty to sixty-nine. Presumably, more exemptions from the age sixty rule would likely be granted to pilots under, say, sixty-five than pilots over that age. Therefore, the cumulation of accidents caused by pilots in their late sixties with accidents caused by pilots in their early sixties may as a practical matter tend to skew the Study.

The FAA also presented evidence of automobile traffic accidents and fatalities related to age. Res. Addendum B.

⁴ While Class III is not the universe from which air carrier pilots would be selected, it is the category where the ratio of accidents to flight time is subject to the least distortion.

The connection between automobile drivers and pilots itself seems tenuous given the pilots' training, demonstrated proficiency, medical fitness, etc. Some of the FAA's evidence does not reflect "exposure" and some of it attempts to relate the nonparallel categories of automobile *fatalities* and aircraft *accidents*. Res. Br. at 19, n.17. Because elderly people seem more likely to *die* as a result of traffic accidents than younger people, the probative value of this latter showing is diminished.

Along with a directive for a more complete consideration of petitioners' second claim on remand, the FAA was also requested to explain how it could rationally grant exemptions to younger pilots who had suffered from alcohol abuse, heart conditions and the like but not grant exemptions to apparently healthy and proficient pilots over age sixty. The agency's justification was that, where particular and identifiable health problems are shown, specific medical tests may be conducted to indicate whether the pilot in question can continue to perform. On the other hand, "[a]ssessing the risks associated with determining which pilots may fly beyond age 60 concerns detrimental conditions which are unknown." Res. Br. at 32. Exactly how this distinction applies as a practical matter is not entirely clear to us, but neither have the petitioners been able to demonstrate its invalidity either theoretically or practically. Nor have petitioners apparently yet been able to present to the FAA a totally reliable test or group of tests which would reveal with certainty any general deterioration of piloting skills associated with advancing age. See *Aman I, supra*, at 954. For present purposes, we will not require more of the FAA with respect to the consistency of restoring stricken younger pilots to duty while barring oldsters whose records are impeccable.

II.

Admittedly, petitioners in this case face a Catch-22: from one perspective they cannot get exemptions until they show they can fly large passenger aircraft safely, and they

cannot show they can fly such planes safely until they get exemptions. Thus, a valid statistical demonstration of comparative safety records by age seems difficult to obtain unless all age groups are engaged in the same kinds of flying. Since the age sixty and over group may not pilot large passenger transport aircraft, statistical comparisons are suspect. Nevertheless, it was the petitioners' burden to present persuasive evidence that granting exemptions would not impair safety. While we have seen no compelling evidence that granting exemptions would increase the risk of accident, neither have we seen strong evidence that the experience of the 60-and-over pilot clearly overbears the danger of deterioration of piloting skills (or of sudden incapacitation) associated with the aging process. Where crucial issues of public safety are at stake, we would look for such a showing. Were the FAA to grant exemptions, it (and we) would no doubt be better able to resolve the question before us, but, absent the requisite compelling evidence, we must defer in these circumstances to the expert agency.⁵

We believe the agency's order is supported by substantial, albeit certainly not compelling, evidence.⁶ We reach this conclusion because of the obvious difficulty in attempt-

⁵ In *Aman I*, we also suggested that there might be administrative or economic reasons for the agency's policy of withholding exemptions from the age sixty rule and invited the FAA to discuss these aspects of the problem if they were relevant. The agency has elected on remand not to address non-safety concerns. We think that administrative and economic factors could hardly be entirely absent. But, since the petitioners have been unable to carry the heavy burden of establishing a case for exemptions from the rule on a safety basis alone, we need not speculate about the economic and administrative aspects.

⁶ We would reiterate that we are not, as the dissent argues, holding that "every airline pilot, on his or her 60th birthday, and regardless of physical condition or experience, becomes a significantly greater safety hazard than before" *Infra* at 17 (emphasis in original). The grant of specific exemptions from the age 60 rule, and not the validity of the rule itself, is at issue here. In any event, line-drawing may inevitably involve some arbitrariness.

ing to balance on a statistical basis experience against reliable indicators of good health and ability to perform as age advances. Certainly the record abounds with testimonials by experts in both flying and medicine to the experience and judgment of the older aviator and the feasibility of assuring the good health and performance of this kind of pilot through frequent and sophisticated testing. We are certainly not in a position to say that the numerous supporters of the petitioners' case are wrong. And it is obvious that the FAA must continue and must enhance its efforts to accommodate their points of view. At this time, however, we are not prepared to overrule the agency in a matter of such immense sensitivity as this one.⁷ The FAA should not take this as a signal that the age sixty rule is sacrosanct and untouchable. Obviously, there is a great body of opinion that the time has come to move on. The agency must give serious attention to this opinion.

Accordingly, the order of the Federal Aviation Administration is

AFFIRMED.

WILL, *Senior District Judge*, dissenting. This court, in *Aman v. FAA*, 856 F.2d 946 (7th Cir. 1988), reviewed the age 60 rule's "tortured history," majority op. at 2, established the appropriate "substantial evidence" standard of review, noted that while the FAA is theoretically empowered to grant exemptions from the rule, none has ever been granted, vacated the FAA's order and remanded the

⁷ The principal prescription of the dissent would be merely to remand "for consideration of the adoption of regulations establishing ascertainable and meaningful standards to govern the granting of at least some exemptions to the age 60 rule." *Infra* at 17-18. Of course, as our opinion suggests, we too would look with favor upon this sort of consideration by the FAA. However, this consideration, because of the inevitable delays, would likely be of slight help to these petitioners.

case to the agency for further proceedings and the presentation of further evidence that no airline pilot older than age 59, regardless of physical condition and experience, is qualified to fly a plane seating more than thirty passengers.

When the FAA adopted its age 60 and out rule some thirty-one years ago, in 1959, it justified the rule by stating:

- (a) “. . . that there is a progressive deterioration of certain important physiological and psychological functions with age, that significant medical defects attributable to the degenerative process occur at an increasing rate as age increases, and that sudden incapacity due to such medical defects becomes significantly more frequent in any group reaching age 60”

and

- (b) “. . . that such incapacity, due primarily to heart attacks and strokes, cannot be predicted accurately as to any specific individual on the basis of presently available scientific tests and criteria . . . [so that] any attempt to be selective in predicting which individuals are likely to suffer an incapacitating attack would be futile under the circumstances and would not be medically sound”

24 Fed. Reg. 9767 (Dec. 5, 1959). At the same time, the FAA also found that:

Other factors, even less susceptible to precise measurement . . . [also] must be considered. These relate to loss of ability to perform highly skilled tasks rapidly, to resist fatigue, to maintain physical stamina, to perform, effectively in a complex and stressful environment, to apply experience, judgment and reasoning rapidly to new, changing and emergency situations, and to learn new techniques, skills and procedures. The progressive loss of these abilities . . .

even though they may be significant in themselves prior to age 60 . . . assume greater significance at the older ages when coupled with medical defects leading to increased risk of sudden incapacitation.

Id.

Since 1959, numerous pilots, approaching or having celebrated their sixtieth birthdays, have petitioned for individual exemptions from the FAA's rigid enforcement of its age 60 and out rule. The agency, however, has never granted an exemption—to anyone, regardless of his or her physical qualifications or experience. Pilots with tens of thousands of hours of flight time and flawless records, and who pass every physical test with flying colors, suddenly are grounded on their sixtieth birthdays, even though the day before they were flying, without restrictions, and were acknowledged to be qualified and, ironically, are still deemed qualified to pilot planes with thirty passengers or less.

I

The FAA actually admits to a policy of uniformly denying all petitions for exemptions from the age 60 rule. It's not that the FAA pretends that no person over the age of 59 could ever safely pilot a Part 121 flight. In fact, the agency concedes that some over-59 captains would do just fine. Denial of Exemption, issued May 26, 1989, p. 31; petitioners' appendix at 31. Then why not grant exemptions to those pilots? Why does the FAA persist in refusing ever to exempt any pilot, no matter how able, from its 60 and out rule? And why does it refuse to issue meaningful standards and criteria for granting at least some exemptions? Because, says the FAA, although many pilots 60 and over would make safe captains, there is simply no way to tell the safe ones from the dangerous ones in advance.

In support of this position, the FAA advances, today, in 1990, the same kinds of justifications it originally of-

ferred thirty-one years ago, in 1959. And in 1990, just as in 1959, these justifications are of two types. The first starts from the proposition that “some psychomotor, emotional, intellectual and physical attributes necessary for enhanced flight crew performance deteriorate with age,” Exemption Denial at 32, resulting in a “sharp decline in physical and cognitive performance after age 60,” *id.* at 30; adds that there is no reliable way of measuring (or even necessarily detecting) the extent of an aging pilot’s deterioration; and concludes that it is not scientifically possible to screen out safe 60-year-old pilots from dangerous ones without actually putting them up in the skies and letting them fly.

The FAA’s second longstanding justification begins with the observation that at age 60 skills are not only deteriorating but beginning to do so at an increasing and increasingly unpredictable rate; adds that the dangers of their deteriorating to the point of sudden incapacitation (in flight, presumably) is significantly greater at age 60 and beyond than it was before; and finishes, again, with the assertion that there is no reliable way to tell a safe 60-year-old pilot, who won’t suddenly collapse in flight, from a dangerous one, who will. “The aging process . . . is largely unpredictable, and generally is not measurable [T]here are no generally applicable medical tests that can, at this time, adequately determine which individual pilots are subject to incapacitation secondary to either acute cardiovascular or neurological events or to more subtle conditions related to cognitive functioning.” Exemption Denial at 32.

II

Two years ago, in *Aman, supra*, the FAA, advancing both of its customary justifications, defended its original denial of many of the same petitions that are before us again on this appeal. At that time, this court partially upheld the logic of the FAA’s customary justifications, finding what the FAA itself has repeatedly held in con-

nection with every request for an exemption since 1959, i.e., "substantial evidence [to] support[] . . . rejection of the contention that the petitioners' protocol, combined with existing methods of operational testing, would screen out *all* increased risks of incapacitation or undetected skill deterioration among pilots older than sixty." 856 F.2d at 957 (emphasis added).¹ The *Aman* panel, however, ultimately vacated the FAA's denial and remanded for further proceedings, concluding that the FAA had "failed to set forth a sufficient factual or legal basis for its rejection of the petitioners' claim that older pilots' edge in experience offsets any undetected physical losses." *Id.*

It is unclear to me just what the panel in *Aman* meant for the FAA to do on remand. Given the number and variety of tests that are available and commonly used to measure the physical and cognitive powers of pilots—flight simulator tests, vision and depth perception tests, hearing tests, stress tests, blood tests, psychological workups, X-rays, angiograms and EKGs—I find it difficult to believe that there are skills or physical or cognitive abilities which the FAA can identify as necessary for safe flying but for which it either cannot or does not reliably test all pilots, including 60-year-olds and regardless of whether they pilot flights with more than thirty passengers or other flights with fewer passengers. If it is true, however, that physical deterioration can't be tested and measured accurately, as the panel in *Aman* found "substantial evidence" to show, then it baffles me how the FAA, on remand, was supposed to reconsider the relationship between physical skills and abilities, on the one hand, and experience on the other. For whether, if as a pilot grows older, experience lends an edge which offsets waning skills and abilities, necessarily depends on at least two things: (1) how much experience the pilot has and (2) how severely

¹ I would point out in passing that the FAA does not assert that it screens out "*all*" risks of incapacitation in pilots of any age and that, in fact, from time to time pilots under age 60 have had physical problems in flight.

physical skills and abilities have “deteriorated.” And if one of those things can’t be reliably measured for risk, or even spotted—“[A] substantial body of medical opinion continues ‘to doubt the feasibility’ ” of measuring the “incremental risk associated with . . . *undetected* deterioration of skills among pilots over sixty,” *Aman*, 856 F.2d at 954 (emphasis added)—then balancing an intangible like experience against undetectable or unmeasurable deterioration would be some trick. The same problem, of course, must have faced the FAA on remand in trying to weigh the benefits of experience against its asserted concern about the allegedly unpredictable risks of “sudden incapacitation.”

The more serious difficulty, however, with the FAA’s continuing reliance on “sudden incapacitation”—the specter of a pilot in the cockpit, of no matter what age, suddenly stricken by a heart attack or a stroke—hasn’t much to do with whether the incapacitated pilot, suddenly stricken, could by dint of experience avert a crash. At that point, the safety net obviously is not experience but the presence of one or two other qualified pilots in the cockpit. Instead, the troubling problem with the FAA’s “sudden incapacitation” justification is its premise. The panel in *Aman* found substantial evidence to support the FAA’s conclusion that current medical science cannot determine which pilots over 60 will be most vulnerable to sudden and incapacitating disability. But that should have been a follow-up inquiry, not the first one. The first inquiry should be whether there is substantial evidence, current and valid in 1990, to support the proposition that all pilots, age 60 and older, are significantly more prone to sudden medical catastrophe than other pilots. For the age 60 and out rule makes sense only if it screens for risks that are significantly higher for all 60-year-olds than for 30, 40 or 50-year-olds. Otherwise, the rule is simply an arbitrary, overly broad and outmoded presumption, smelling of age discrimination, about infirmities which do not uniformly afflict all pilots over 60 and should not be assumed to.

The panel in *Aman* also remanded with instructions to the FAA to “make sense” of its increasing willingness to issue “special certificates” to younger pilots with records of heart disease, drug abuse and alcoholism—which conditions, like aging, can be progressive—in the face of its stubborn refusal ever to grant exemptions from the age 60 rule. In response, the FAA has now explained that “present tests can predict the expected course of a known medical deficiency” such as heart disease or alcoholism “with sufficient accuracy to allow valid, individualized judgments” but that “the same accuracy is not possible when assessing the decrements associated with the aging process.” FAA Brief at 32. The FAA, however, has not offered any evidence to support this distinction between the special certificates it grants to younger pilots and its refusal even to promulgate meaningful regulations and criteria for age exemptions for older pilots, much less to grant an age exemption to an older pilot. And there is no citation, either in the FAA’s brief or its latest order, for the proposition that the symptoms of alcoholism, drug abuse and heart disease can be monitored more closely and reliably than the “decrements” of aging. We defer to agency expertise, where expertise has been demonstrated, but “deference should not be equated with a license to issue inconsistent determinations.” *Aman*, 856 F.2d 957. The pilots have plausibly alleged that the FAA’s distinctions and exemption practices are inconsistent. The FAA has only answered with unsupported and unconvincing assertions.

The majority acknowledges that “exactly how [the FAA’s asserted] distinction [between aging and other conditions] applies as a practical matter is not entirely clear to us,” majority op. at 7, but concludes that for present purposes, it will not require more of the FAA with respect to the consistency of restoring stricken younger (59 and under) pilots (suffering from alcohol abuse, drug abuse, heart conditions) to duty while grounding other pilots, 60 and over, whose records and physical condition are, by contrast, impeccable.

III

The FAA's record here is more than just "disappointing." *Aman*, 856 F.2d at 949. The agency has relied on a seriously flawed Flight Time study even though, as the majority points out, "various experts, even some from the FAA, state that the study should not be relied on as determinative—or even probative on the question of the continued validity of the age sixty rule." Majority op. at n.1. In addition, as the majority also recognizes, "the FAA's own study on its face may in some aspects be construed to support the petitioners' claims" *Id.* at 6. The FAA has also relied on evidence of automobile traffic accidents involving fatalities as related to age. But again, as the majority points out, "The connection between automobile drivers and pilots itself seems tenuous given the pilots' training, demonstrated proficiency, medical fitness, etc." and "attempts to relate nonparallel categories of automobile *fatalities* with aircraft *accidents* does not reflect "exposure." *Id.* at 7.

The petitioners, as the majority also concedes, face a Catch-22, if the FAA and this court require them to prove, with statistics that reflect actual flight time in large passenger transport planes with more than thirty passengers, that they can fly those planes as safely as pilots who are not yet 60. For until at least one exemption has been granted, none of the petitioners are eligible to pilot such flights and consequently no such statistics can be compiled. It is possible that statistics might be available for petitioners' flight time in the same large passenger aircraft but carrying thirty passengers or less or cargo. If such statistics are available, they have not been referred to by the FAA or the pilots.

In lieu of statistics, petitioners have presented impressive evidence of pilots on the brink of age 60 performing heroic deeds and saving lives where less experienced pilots might have failed. They have also presented what the majority concedes is "impressive expert opinion evidence" that at least some experienced pilots over age 60

are qualified to fly large commercial aircraft and may be even better qualified than younger, less experienced pilots. And, relying on figures from the National Transportation Safety Board, they have presented evidence that licensed pilots age 60 and older show a lower accident rate per 1,000 pilots than pilots in other age groups, although those statistics do not reflect the number of hours flown by members of each age group and we do not know, therefore, whether pilots age 60 and over fly more or fewer hours per year than pilots in other age groups.

The majority concludes, on the basis of the foregoing, that the FAA has presented "substantial evidence" in support of an absolute 60 and out rule, although it admits that it has seen "no compelling evidence that granting exemptions would increase the risk of accident" Majority op. at 8. The majority also concludes that it has seen "no strong evidence that the experience of the 60-and-over pilot clearly overbears the danger of deterioration of piloting skills (or of sudden incapacitation) associated with the aging process." *Id.*

Since the FAA has refused as a matter of policy to grant any exemptions, what the FAA and the majority are holding, in effect, is that *every* airline pilot, on his or her 60th birthday, and regardless of physical condition or experience, becomes a significantly greater safety hazard than before, even though, just one day before, he or she was FAA certified, qualified and safe. The evidence in this case does not warrant that conclusion. Nor does everyday, ordinary good old common sense.

IV

Rather than again urging the FAA to recognize the need for keeping up with advanced technologies and accommodating other points of view, I would vacate the FAA's latest order and remand for action on three fronts.

I would remand, first, for consideration of the adoption of regulations establishing ascertainable and meaningful

standards to govern the granting of at least some exemptions to the age 60 rule. The FAA's present regulations—which dangle the possibility of an exemption to a pilot who can show “why the exemption would not adversely affect safety” or why, at least, it “would provide a level of safety equal to that provided by the rule,” 14 C.F.R. § 11.25(5)—do not sufficiently guide the agency in exercising its discretion and do not begin to provide adequate notice to pilots about the kind of showing that would justify an exemption. Cf. *Allison v. Block* 723 F.2d 631, 636-38 (8th Cir. 1983) (requiring the development of substantive standards to guide discretion); *Environmental Defense Fund, Inc. v. Ruckelshaus*, 439 F.2d 584, 596-98 (D.C. Cir. 1971); *Holmes v. NYCHA*, 398 F.2d 262, 264-65 (2d Cir. 1968); 2 K. Davis, *Administrative Law Treatise* § 7.26 at 128-32 (2d ed. 1979). See also *Morton v. Ruiz*, 415 U.S. 199 (1974). Moreover, in light of the agency's policy of never granting age 60 exemptions, its present regulations are a fraud.

I would also remand for a showing, by current and substantial evidence, that all pilots age 60 and over are significantly more prone to “sudden incapacitation” than all pilots under 60. The agency should re-examine the relevant data and articulate a satisfactory explanation, rationally connected to the facts, for its ongoing reliance on “sudden incapacitation” and for drawing a line at age 60.

Finally, I would remand, yet again, for a reasoned and full explanation for treating requests for special medical certificates under 14 C.F.R. § 67.19 differently than petitions for exemptions from the age 60 and out rule. Cf. *Airmark Corp. v. FAA*, 758 F.2d 685, 691-95 (D.C. Cir. 1985) (recognizing the caprice with which the FAA rules on exemptions in other areas). And in that connection, I would require the FAA to consider the possibility that obligating pilots 60 and older to undergo more frequent medical and skills examinations than other pilots—a technique the agency already uses to monitor the condition of pilots who have been granted “special issuances” under

14 C.F.R. § 67.19—might provide enough accurate and up-to-the-minute information about a pilot's health and skills to enable the agency to make *individualized* determinations about the risks of letting any particular captain, 60 or older, pilot a Part 121 flight, rather than arbitrarily and capriciously denying exemptions to all.

A true Copy:

Teste:

*Clerk of the United States Court of
Appeals for the Seventh Circuit*

UNITED STATES COURT OF APPEALS
For the Seventh Circuit
Chicago, Illinois 60604

JUDGMENT—WITH ORAL ARGUMENT

Date: October 31, 1990

BEFORE:

Honorable William J. Bauer, Chief Judge
Honorable Richard D. Cudahy, Circuit Judge
Honorable Hubert L. Will, Senior District Judge*

No. 89-2524

JOHN H. BAKER, COURTNEY Y. BENNETT, ROBERT
S. BOS, JOHN W. CHADICK, JACK P. CHAMBERS,
CHARLES G. CRISWELL, CHARLES H. DEMING, BUR-
TON E. DEZENDORF, et al.,

Petitioners,

v.

FEDERAL AVIATION ADMINISTRATION and JAMES B.
BUSEY, Administrator, Federal Aviation Administration,

Respondents.

Petition for Review of an Order from the Federal
Aviation Administration No. 25008 25524

This cause was heard on the record from the above
mentioned agency, and was argued by counsel.

On consideration whereof, IT IS ORDERED AND AD-
JUDGED by this Court that the Order of the Federal
Aviation Administration in this cause appealed from be,
and the same is hereby, AFFIRMED, with costs, in ac-
cordance with the opinion of this Court filed this date.

* The Honorable Hubert L. Will, Senior District Judge for the
Northern District of Illinois, is sitting by designation.

Exemption No. 5052

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C. 20591

* * * * *

In the matter of the petition of *

COURTNEY Y. BENNETT *
et al., and *

Regulatory
Docket No. 25008

JOHN H. BAKER *
et al., *

Regulatory
Docket No. 25524

for an exemption from *
§ 121.383(c) of the Federal *
Aviation Regulations *

* * * * *

DENIAL OF EXEMPTION

By letter dated May 1986 and supplements dated August 1986 and October 1986, Mr. Raymond C. Fay, formerly of Haley, Bader & Potts and currently of Bell, Boyd & Lloyd, Three First National Plaza, 70 W. Madison Street, Suite 3200, Chicago, Illinois 60602, petitioned on behalf of Melvin M. Aman and 38 other current and former airline pilots for an exemption from § 121.383(c) of the Federal Aviation Regulation (FAR), commonly referred to as the Age 60 Rule, to permit Mr. Aman and each of the 38 other current and former pilots (petitioners) to continue to serve as pilots in Part 121 air carrier operations after reaching their 60th birthday.

Subsequent to the submission of the original petition, six of the petitioners have requested that their names be withdrawn and nine others elected not to petition for review of the Denial of Exemption issued September 8, 1987 to the United States Court of Appeals for the Seventh Circuit. The six petitioners who withdrew are Melvin Aman, Charles Davenport, James Donegan, Ralph Mischker, Charles Raphael, and James Williams. The nine petitioners who elected not to petition to the Seventh Circuit are William Durgan, Robert Greene, Cecil Judd, Andrew Kruzich, James LeBel, Theodore Misselwitz, Lynn Norton, Harry Owen and Charles Pease. Because Melvin Aman has withdrawn as a petitioner, the name cited in the future as the petitioner will be Courtney Y. Bennett, et al.

A summary of the petition was published in the *Federal Register* on July 24, 1986 (51 FR 26622), and the comment period closed on August 13, 1986. By request of the Aircraft Owners and Pilots Association, the comment period was reopened for an additional 30 days on September 29, 1986 (51 FR 34520). On September 8, 1987, the Federal Aviation Administration (FAA) issued Denial of Exemption No. 4848, (Disposition Notice, 52 FR 36326, 1987).

Melvin M. Aman, et al., petitioned the United States Court of Appeals for the Seventh Circuit for review of Denial of Exemption No. 4848, Petition for Review of an Order of the FAA, *Melvin M. Aman v. Federal Aviation Administration*, No. 87-2598 (7th Cir. 1988). The court vacated the order denying the exemptions and remanded to the FAA for further consideration. The court concluded that, while the petitioners had failed to show that their protocol, combined with existing methods of operational testing, would screen out all increased risks of incapacitation or undetected skill deterioration among pilots older

than 60, "the FAA failed to set forth a sufficient factual or legal basis for its rejection of the petitioners' claim that older pilots' edge in experience offsets any undetected physical losses," *Melvin M. Aman versus Federal Aviation Administration*, No. 87-2598, op. cit., at 21 (7th Cir. September 12, 1988).

In addition to the petition referenced above, on February 24, 1988, John H. Baker and 17 other current and former airline pilots petitioned for an exemption from § 121.383(c), (Docket No. 25524). Counsel for this group of pilots requested that the FAA expedite the processing of the petition and waived any interest the petitioners may have had in adhering to the notice and comment procedures prescribed in Part 11 of the FAR. Because of the Seventh Circuit's decision in the *Aman* case, the FAA will consider Mr. Baker's petition in light of the comments received in the reconsideration of the Bennett petition.

Section of the FAR affected:

Section 121.383(c) states, in pertinent part, that no certificate holder may use any person, nor may any person serve, as a pilot in operations under Part 121 of the FAR if that person has reached his 60th birthday.

Taken from petitioners' briefs, supplements, exhibits, and comments submitted by individual petitioners, the applicable portion of petitioners' supportive information is as follows: Petitioners assert that because the youngest pilots have the highest accident rates the replacement of healthy, experienced pilots at age 60 with younger, less experienced pilots may have an adverse effect on safety.

The petitioners state that the tolerance of increased, but acceptable, risks has been demonstrated by the FAA in recent years in the great number of special issuances of

medical certificates to pilots (under age 60) with various medical problems, e.g., alcoholism, myocardial infarction, bypass surgery, monocular vision, personality disorders, strokes, and dysrhythmias. The acceptance of greater risk in these issuances to pilots under age 60 with known pathology (in some instances progressive pathology) is squarely at odds with the FAA's refusal to issue exemptions to the Age 60 Rule.

Public Comment

In an effort to implement the court's directive, the comment period was reopened for 30 days on October 19, 1988 (53 FR 41147), and comments were invited specifically on the age versus experience issue. During the 1988 comment period, approximately 178 comments were received. In addition, petitioners filed three additional supplements dated November 1988, January 1989, and March 1989.

A report, "The Influence of Total Flight Time, Recent Flight Time, and Age on Pilot Accident Rates," hereinafter referred to as the "Flight Time Study,"¹ was prepared in 1983 by Acumenics Research and Technology, Inc., Bethesda, Maryland, under a contract sponsored by the Transportation Systems Center, U.S. Department of Transportation (DOT). In the report, the author analyzes aviation accident statistics with respect to recency of pilot experience, total pilot experience and pilot age. A copy of this report was placed in Docket No. 25008 for public comment.

Numerous individual pilots who are over or nearly age 60 are in favor of granting the petition. Several comments received from physicians are also in favor of granting the petition. ALPA and several individuals, including airline pilots, argue that the petition should be denied in the in-

terest of safety. Approximately 40 percent of the favorable comments include statements to the effect that the current pilot shortage or the experience of older pilots outweighs the disadvantages associated with the aging process. Approximately 30 percent of those concurring state that medical tests exist to determine competence of pilots over the age of 60. Several studies are cited which allegedly substantiate the positions taken. These comments are discussed in the analysis section below.

The National Air Carrier Association, Inc. (NACA) commented that the "Flight Time Study" cannot be used as a basis for deciding the petitions under review. NACA explains that the study itself states that air carrier and commuter accidents are not included in the calculations because the limited number of such accidents would not appreciably affect the relative accident rate in the study. NACA also states that "class 1, class 2, and class 3 license holders" are lumped together as a group and that statistics for class 1 medical certificate holders are not isolated. Additionally, NACA argues that one cannot use the experience levels and accident rates of general aviation to govern a determination involving air carrier pilots who operate under Part 121 of the FAR.

Dr. Jefferson M. Koonce, a professor at the University of Illinois, asserts methodological problems in the research for the "Flight Time Study." The points made in his comment and the FAA's responses to his proposals are discussed in the analysis section below.

The Air Line Pilots Association (ALPA) commented that the available evidence does not make a persuasive case that there will be no increased risk to air safety if airline pilots age 60 and over are granted exemptions on a selected basis. ALPA further states that, upon close scru-

tiny, the data submitted by the petitioners does not support the argument that the experience of pilots age 60 and over outweighs the greater danger they present from sudden incapacitation or otherwise diminished mental or physical performance.

ALPA claims that experience does not prepare a pilot for technological change. ALPA states that reports from individual ALPA members and from the ALPA Aeromedical Office appear to show that the older more-experienced pilots have far more difficulty than younger less-experienced pilots in accommodating to the new generation of highly computerized aircraft with sophisticated cathode ray tube information and flight guidance displays.

ALPA notes that the "Flight Time Study" concludes that pilots with more than 5,000 hours of cumulative flight time have a significantly lower accident rate than pilots with less flight time (c.f., Figure 1). However, ALPA states, within the more than 5,000-hour pilot group, the accident rate begins to increase at age 50 and is highest for pilots who are age 60 and over. The implication of this, ALPA concludes, is that after 5,000 hours of flight time, which airline pilots achieve relatively early in their careers, additional flight time does not significantly improve pilot performance from a safety standpoint. Also, regardless of additional experience beyond 5,000 hours, such performance is likely to diminish with each advancing year after a pilot turns 50 because of the continually diminishing mental or physical performance associated with the aging process.

ALPA summarized that there is no study available at this time which reliably demonstrates that the greater experience of pilots age 60 and over suffices to counter the otherwise unacceptable increased risk of undetectable physical and mental decrements associated with the aging process. ALPA argues that without a persuasive case, the

FAA's policy of denying petitions for exemptions to the Age 60 Rule should remain in effect. ALPA asserts that such a policy is founded on the sound conclusion that there is currently no protocol which eliminates all the incremental risk associated with sudden incapacitation or undetected deterioration of skills among pilots age 60 and over.

ALPA supported the rationale for granting special medical certificates to pilots otherwise disqualified by episodes of heart disease or alcoholism. ALPA suggested that such rationale is based on the fact that the FAA has observed these conditions, understood their predictable history, and has been able to develop the circumstances and conditions under which it can issue such certificates in carefully selected cases without endangering air safety. ALPA concluded that although protocols can be developed to grant special medical certificates to pilots with heart disease or alcoholism, protocols cannot be developed to detect all of the risk factors associated with the aging process.

Of the approximately 140 air carriers operating under Part 121, only one questioned the validity of the rule. That air carrier requested the FAA to "assemble sufficient information to justify the current rule *which may not be justified.*" (emphasis original)

These and the various comments and submissions of the petitioners are addressed in the analysis which follows:

Section 601(a)(5) of the Act states that the Administrator is empowered to promote safety of flight of civil aircraft in air commerce by prescribing and revising from time to time reasonable rules and regulations (minimum standards) governing, in the interest of safety, the maximum hours or periods of service of airmen, and other employees, of air carriers.

Section 601(a)(6) of the Act states that the Administrator is empowered to promote safety of flight of civil aircraft in air commerce by prescribing and revising from time to time such reasonable rules and regulations, or minimum standards, governing other practices, methods, and procedures, as the Secretary of Transportation may find necessary to provide adequately for national security and safety in air commerce.

Section 601(b) of the Act requires that, in prescribing standards and regulations and in issuing certificates under Title VI of the Act, the Administrator shall give full consideration to the duty resting on air carriers to perform their services with the highest possible degree of safety in the public interest.

Section 601(c) of the Act states that the Administrator from time to time may grant exemptions from the requirements of any regulation prescribed under Title VI (Safety Regulation of Civil Aeronautics) if he finds that such action would be in the public interest.

The so-called "Age 60 Rule" (issued December 1, 1959; effective March 15, 1960) was adopted in recognition of the Administrator's responsibility to regulate air commerce in such a manner as to best promote public safety. The Age 60 Rule is based on the potential risk to safety presented by the use of pilots, aged 60 or over, in Part 121 air carrier operations. Among the reasons for adopting the Age 60 Rule are certain factors, in addition to risks of sudden or subtle incapacitation, which, with some variations, are applicable to all aging individuals and are not susceptible to precise measurement. Some of these safety factors relate to loss of ability to perform highly-skilled tasks rapidly; to resist fatigue; to maintain physical stamina; to perform effectively in a complex and stressful

environment; to apply experience, judgment and reasoning rapidly in new, changing, and emergency situations; and to learn new techniques, skills, and procedures.

The Age 60 Rule, because of its controversial nature, has been subjected to frequent judicial scrutiny. As early as 1960, the basic rule was challenged in litigation. It has been the subject of numerous suits since that time, many of which have focused on the agency's policy of not granting exemptions from the rule. In each instance, the rule, its legality, or the FAA's refusal to grant exemptions to the rule have been upheld by the courts. A reexamination of these many cases, including those cited by the petitioners, would serve little purpose.

As an out-growth of hearings conducted by the House Select Committee on Aging, Public Law 91-171 was approved on December 29, 1979. This legislation required the National Institute on Aging (NIA), part of the National Institutes of Health (NIH), to conduct a study to determine whether the Age 60 Rule was medically warranted, whether mandatory retirement at any specific age was medically warranted, and what the effects were of aging on the ability of individuals to perform as pilots.

The NIA, in its extensive analysis, found no feasible safety alternative to the rule. The panel which conducted the review, while indicating that it did not find any identifiable medical significance to the point in time when a person reaches age 60, nevertheless found abundant and persuasive evidence that, among pilots as well as others, disease, disability, and death rates increase steeply during each half-decade beyond the age of 50. They noted that decline in cognitive function (information processing and other intellectual functions) with age represents another category of impairment, and, if undetected, could

compromise pilot performance. The panel also noted that currently this aspect of the medical appraisal is the least developed. The panel concluded that age-related changes in health and performance influence adversely the capability of increasing numbers of individuals to perform as pilots with the highest level of safety. Additionally, the panel could not identify the existence of a medical or performance appraisal system that can single out those pilots who would pose the greatest hazard because of early or impending deterioration in health or performance.

As noted above, approximately 40 percent of the comments in favor of granting the petition included statements to the effect that the current pilot shortage or the experience of older pilots outweighs the disadvantages associated with the aging process. No empirical evidence was offered to substantiate these comments. Approximately 30 percent of those in favor of granting the petition indicated that medical tests exist to determine competence of pilots over the age of 60. Again, no specific protocols or tests were offered in support of this proposition. Several studies were cited which allegedly substantiated these positions. However, when pursued, either no study was located or the comment was found to be general in nature amounting to nothing more than an unsupported assertion.

With regard to the NACA comments on the utility of the "Flight Time Study" in this matter, the FAA cannot agree. The FAA finds that the "Flight Time Study" provides a unique and valuable set of data which, if analyzed as is done herein, can provide valuable insight into human performance changes as a function of age. Air carrier and commuter accidents were not included so that the data would be relatively homogeneous in considering only one type of operation (general aviation), not because of their small numbers. Because of the statistically small amount

of air carrier and commuter accidents, however, it is clear that including these data would not substantially alter the results of the study. While it is true, as NACA notes, that all classes of license holders are lumped together in one part of the "Flight Time Study," another part segregates data applicable to class 3 license holders. Distinguishing these data allows us to focus on class 1 and class 2 license holders taken together. These are very valuable data, for it is this pool of pilots over 60 which petitioners seek to tap.

Through their many submissions to the court and to the FAA, petitioners argue that the loss of experienced pilots to the airlines because of retirement mandated by the Age 60 Rule is resulting in a shortage of pilots, which is forcing the airlines to lower their standards and to hire pilots with less experience. Thus, the petitioners argue, granting exemptions to the Age 60 Rule would ease this shortage and increase safety. In addressing this issue, the Court of Appeals concluded that, although the petitioners' evidence was only "suggestive," the FAA had failed to set forth a factual or legal basis for its rejection of the petitioners' claim that older pilots' edge in experience offsets any undetected physical losses.

The FAA does not agree with petitioners' assertions. The FAA concurs with ALPA, who argues that the experience of pilots age 60 and over does not outweigh the danger they present from sudden incapacitation or otherwise diminished mental or physical performance. ALPA states, and the FAA concurs, that the accident rate among pilots begins to increase at age 50 and is highest for pilots who are age 60 and over. The implication of this is that after 5,000 hours of flight time, which airline pilots achieve relatively early in their careers, additional flight time does

not significantly improve pilot performance from a safety standpoint. At some point, the law of diminishing returns comes into play. Once a pilot achieves a certain level of expertise, additional flight time will not significantly improve pilot performance. Also, regardless of additional experience beyond 5,000 hours, such performance is likely to diminish with each advancing year after a pilot turns 50 because of the continually diminishing mental or physical performance associated with the aging process.

Petitioners' third supplement filed on November 18, 1988, states that the NTSB "has recently conducted a study of releasable accident/incident records from 1983 to present." Petitioners assert that there were "926 accidents attributed to pilot inexperience as a cause or factor" of the accidents. Petitioners cite 13 air carrier accident briefs where inexperience is listed as a cause or factor. Petitioners state that the average age of the pilot in command of the air carrier accidents was 35.4 years.

The study to which petitioners refer is actually a simple data base search which was conducted by the Bureau of Safety Programs, Accident Data Division of the NTSB, at the request of Mr. Raymond Fay of Bell, Boyd & Lloyd, counsel for the petitioners for exemptions.

Petitioners' Exhibit 97 does not reflect what petitioners represent in the text of the third supplement. The petitioners include two NTSB briefs which are not referenced in their argument. In any event, petitioners attempt to suggest that pilot inexperience is the sole cause or factor of the 926 accidents by stating:

there were 926 accidents *attributed to pilot inexperience as a cause or factor.* . . . (emphasis supplied)

The statement is misleading. The "pilot inexperience" to which petitioners refer is only one of many causes or fac-

tors that the NTSB may list in its accident investigations. For example, the Air Florida accident on January 13, 1982, includes 13 factors and 5 causes as contributing to the accident. Inexperience is listed as only one factor out of 13 and is not even listed as a cause of the accident. In fact, of the 13 air carrier accident briefs cited by the petitioners, the average number of causes and factors listed by the NTSB in these accidents is over 9. The fewest number of causes and factors listed in the NTSB accident briefs is 3, and 1 accident brief has as many as 17 causes and factors listed by the NTSB. Moreover, the petitioners fail to explain the difference between a "cause" and a "factor" as defined by the NTSB. The NTSB defines a cause as:

The individual condition or event or the collective sequence of conditions and/or events that most probably caused the accident to occur. Had the individual condition or event been omitted from the sequence the accident would not have occurred.

The NTSB defines a factor as:

A related condition or event which existed or occurred coincident with the conditions and/or events that most probably caused an accident but which may or may not have contributed significantly to the accident. The omission of the factor from the occurrence would not necessarily have prevented the accident.

A factor is similar to a cause in that it adds to or detracts from an accident but differs in a sense that it can be removed from the accident and the accident would still have occurred. Unlike a factor, the removal of a cause from an accident would eliminate the accident altogether. Petitioners show 926 accidents where "pilot inexperience" is listed as a cause or factor. However, in only one third of the 926 is "pilot inexperience" listed as a cause. Of

the 13 air carrier accidents petitioners reference, only 2 had pilot inexperience listed as a cause. Of these 2, the average age of the pilot in command was 46.5 years.

Additionally, the petitioners fail to explain the several categories of inexperience that the NTSB uses in the accident/incident briefs. Specifically, the NTSB has 13 categories of inexperience that can either be a cause or factor of an accident. For example, the NTSB lists "lack of familiarity with geographic area" as an inexperience category. The listing of this category in an accident brief does not tend to prove that a particular pilot is inexperienced. In fact, of the 13 briefs cited by the petitioners, the average hours of flight time for the pilots involved is 5,838, which is hardly indicative of inexperience.

Petitioners' third supplement also states that ALPA has "repudiated" the "unsupported" and apparently "unauthorized" comment of Richard B. Stone, dated October 29, 1986 (FAA Docket No. 2-15; Jt. App. p. 297), in which Mr. Stone stated that a pilot's skills deteriorate with age. Petitioners rely upon a letter sent from ALPA President Henry A. Duffy, to petitioner Eugene W. Garges, Jr. in which President Duffy states his opinion regarding diminishment of professional expertise at age 60.

It is clear that President Duffy's letter on its face, does not repudiate or otherwise suggest that the comments of Mr. Stone were unauthorized or unsupported by ALPA. In fact, telephone conversations FAA personnel had with attorneys from ALPA's legal department on May 10, 1989, revealed that ALPA stands behind their comments of October 29, 1986, and November 16, 1988.

In their third supplement, petitioners cite a report by Mertens and Boone at the 1988 annual meeting of the Aerospace Medical Association. This report described work

that further examined the prediction of complex performance from physiological and psychological measures. Petitions state that "the Federal Aviation Administration has conducted scientific studies to determine whether tests exist to predict pilot performance by means of physiological and psychological measures," and that "Dr. Henry Mertens reported on the results of those studies." A transcription of Dr. Mertens' presentation was attached as petitioners' Exhibit 94. Included in the public docket is a copy of Dr. Mertens written report, prepared for presentation to the Aerospace Medical Association.

Dr. Mertens reported on the results of one study involving a total of 30 subjects: 16 men in a 30 to 39 years age group and 14 men in a 60 to 69 years age group. Using data gathered in 1986 for the medical screening of subjects performing the Civil Aeromedical Institute's Multiple Task Performance Battery (MTPB) in another study, Dr. Mertens selected predictor variables including distant and near visual acuity, diastolic and systolic blood pressure, pulmonary function indices, scores on the information and logic subscales of the Shipley Institute of Living Scale, and the WAIS Digit Span Test. The latter two tests are, respectively, measures of intelligence quotient (IQ) and short-term verbal memory. The criterion measure was an overall index of performance in control conditions by fully rested subjects measured by the MTPB.

The MTPB involves the monitoring of warning lights, monitoring of meters, mental arithmetic, target identification, tracking, and problem solving in combinations that vary workload. Not surprisingly, IQ and short-term memory measures, as opposed to age, were found to correlate best with the MTPB scores. Dr. Mertens, in his written report however, noted that these results contrasted with his previous study (also with Dr. Boone in 1983) where

visual acuity was the best predictor of MTPB performance (emphasis added). Given this inconsistency, Dr. Mertens notes that the differences may be related to differences in age composition of subject samples and suggests that both studies indicate the value of IQ, pulmonary, and acuity data for prediction of MTPB performance.

Obviously, the screening of IQ, pulmonary function, visual acuity, and short-term memory does not provide an acceptable substitute for the broad-spectrum safety of the Age 60 Rule as applied to pilots in air carrier operations. Dr. Mertens says that "the MTPB tasks have high content validity and high face validity for aviation." Nevertheless, the MTPB has not been evaluated as a predictor of actual pilot performance in air carrier cockpits. Therefore, even though Mertens' Study suggests ability to predict MTPB performance, given knowledge of certain variables, it cannot be said that these same variables predict pilot performance.

The number of test subjects in Dr. Mertens study was statistically insufficient to provide other than suggestions for further research. Firm conclusions regarding age and other predictors of performance should not be drawn because of the large number of unobserved, hence, uncontrolled, "within-subjects" variance sources, as demonstrated by comparison of results with the researcher's own earlier study.

Petitioners state that "Dr. Mertens noted that 'some individuals maintain a high level of performance with increasing age, noting recent research of Castelo-Bronco (sic) that psychomotor performance of older pilots, some of whom were over age 60, was approximately equal to that of younger pilots in their 30's.' " Dr. Mertens' paper and

presentation actually stated, "Laboratory studies also frequently show that, although average performance may decline with age, some individuals maintain a high level of performance and that variability among individuals in performance may increase with age." The Age 60 Rule, in part, reflects concern about the decline in average performance with age and about the increasing variability among individuals. Variability is included among the factors that make difficult the separation of individuals from the average.

Petitioners state that Dr. Mertens "discounted certain studies" on the relation of age to performance which failed to control for the health of subjects, saying that these findings were "inapplicable" to groups that are highly selected and controlled for health. . . ." Dr. Mertens actual statement was less supportive as follows: "Although many laboratory studies of the relation of age to performance have shown age-related declines in tasks . . . most of these experiments did not control for the health of subjects and it is difficult to generalize those findings to groups that are highly selected and controlled for health"

The Mertens and Boone study provides useful information and fits into the matrix of applicable research conducted by the FAA and other institutions. It further illustrates the FAA's desire to stimulate research interest in potential alternatives to the "Age 60 Rule" and the development of data bases that provide a sound scientific rationale for assessing the validity of alternative proposals to the existing rule. It is evident that some medical or psychomotor measurements may be predictive of success in the performance of some specifically defined psychomotor tasks. Neither individually nor in sum, however, do these findings provide an alternative mechanism to the

use of an age-related rule to reduce the risk of a broad range of human decrements or failures that could affect air carrier safety.

In their fourth supplement dated January 1989, petitioners cite three National Transportation Safety Board (NTSB) reports which petitioners believe further substantiate their argument that experience offsets or outweighs the decrements associated with the aging process.² Petitioners reference one NTSB conclusion in the Continental Flight 1713 Accident Report and submit as follows:

The captain (age 43) was not experienced in the DC-9, and the first officer was not experienced in the DC-9 or in any swept-wing turbojet airplane . . . Due to the relatively low experience levels of both crewmembers in the DC-9, the pairing of these pilots was inappropriate.

The relevant portion of the NTSB report reads as follows:

Although the captain and the first officer were *experienced aviators*, the captain was not experienced in the DC-9, and the first officer was not experienced in the DC-9 or in any swept-wing turbojet airplane. (emphasis supplied)

The petitioners continue by citing the resultant NTSB recommendation, which reads as follows:

Establish minimum experience levels for each pilot in command and second-in-command pilot, and require the use of such criteria to prohibit the pairing on the same flight of pilots who have less than the minimum experience in their respective positions.

As a result of the NTSB recommendation, the FAA issued Air Carrier Operations Bulletin (ACOB) No. 8-88-1—Flight Crewmember Experience and Scheduling, which states:

Although there is no regulatory requirement that an air carrier schedule an experienced flight crewmember with an inexperienced crewmember, we believe that, from a safety standpoint, it would provide for a higher level of safety to do so. We realize, of course, that in some cases it may not be practical nor possible to do so. For example, a newly-certificated air carrier may consist of flight crewmembers who are all new to both 121 operations and to the type of airplane they are operating. Also, an air carrier may initiate a new type of operation (e.g., long-range international operations) in which the flight crewmembers may be experienced on the type of airplane but have little or no experience in the type of operation.

Since inexperience is an absolute characteristic in any profession, the FAA encourages the combining of inexperienced pilots with experienced pilots. The FAA has recognized that pairing two inexperienced pilots is undesirable. Petitioners do not disclose that the captain in the Continental 1713 accident, though a newly-upgraded captain in the DC-9, had flown with Continental since 1969 (except for a 3-year period from 1983 to 1986) and had accumulated approximately 12,125 total flying hours, including 3,111 hours as first officer in the B-727 and 133 hours as first officer in the DC-9. This captain was not an inexperienced pilot.

There are circumstances when a pilot may not have experience in a type of airplane or operation; for example, when an airline begins service with a new type of airplane, many pilots will be inexperienced in the new equipment but very experienced as pilots. Frequently, the most experienced and most senior (potentially oldest) pilots in an airline will elect to fly an airplane type which has been newly-placed in service, and in which they, like the Continental pilots, are inexperienced.

Petitioners assert that the replacement of experienced pilots with younger, less experienced pilots has an adverse impact on aviation safety. Petitioners' submissions seem to suggest that these younger, less experienced pilots literally replace the pilots who cease flying at age 60. This is simply not true. Pilots normally commence their careers with an air carrier as flight engineers. They advance into first officer positions after they have gained sufficient experience and then progress to captains.

Petitioners further suggest that the captains who cease flying as a result of the rule are being replaced by inexperienced captains. Again, this is simply not true. The FAA has sufficient safeguards to ensure that a potential captain is competent to assume command functions. The normal progression in airlines has been for first officers to be upgraded to captain after gaining sufficient experience. Part of the upgrading process is the initial operating experience (IOE) required by § 121.434. Among other things, § 121.434 requires the upgrading captain to successfully fly with an experienced check airman and also submit to observation by an FAA inspector before assuming unsupervised command duties. The FAA inspector's observation of a flight evaluation of a pilot for the position of PIC gives the FAA an opportunity to evaluate the end product of an air carrier's training program during normal operating conditions. These observations also provide an insight into the competence of the air carrier's training program. During the observation, the FAA inspector also evaluates the check airman's performance with respect to preparing a pilot to qualify as PIC and to assume the pilot in command responsibilities of air carrier operations. The FAA inspector's observation of an initially qualifying or upgrading PIC is one of the best opportunities to check both the quality of subject training programs and the performance of the pilots who have

completed the training. The IOE observation is an additional safeguard for ensuring that a pilot is ready and able to assume command functions.

The petitioners cite another NTSB report involving the crash of an Air Florida Boeing 737 in Washington D.C. on January 13, 1982, but fail to explain how this accident report supports their petition. Both the captain and first officer were experienced pilots. The captain's flying experience before his employment with Air Florida included flying light aircraft, multiengine piston-powered aircraft, and turboprop-powered aircraft. All of his jet transport training and experience was obtained with Air Florida. Before qualifying as a B-737 captain, his jet flight experience consisted of about 1,200 hours as a first officer on DC-9 and B-737 aircraft. Since upgrading to captain, he had accumulated about 1,100 hours. The first officer's experience before his employment with Air Florida was gained as a military fighter pilot. His experience in jet transport-type aircraft consisted of about 1,000 hours as a first officer in the B-737 aircraft. Neither, however, had extensive experience in winter operations. It should be noted that the NTSB cited wing ice, improper planning, not using anti-ice/de-ice system, and failure to perform aborted takeoff as the probable cause of the accident.

By citing the Air Florida accident, it appears that petitioners are claiming that age has some correlation to certain types of operational experience, (e.g., winter operations). This is not true. Any pilot, regardless of age, who has spent a flying career in a specific geographical area, (e.g., semitropical), would be lacking experience when transferring to a geographic area like Alaska or the Northeastern United States. Flying is not unlike many professions: even the most experienced professionals may be lacking in a particular specialty within their discipline. From the accident cited, it would appear that training pro-

grams in winter operations along with pairing of pilots (more experienced with less experienced) is advantageous to safety but, without more, bears no relation to age.

Petitioners reference one NTSB conclusion in the Air New Orleans Flight 962 Accident Report and quote the report as follows:

The Safety Board believes that the flightcrew's operating experience in this airplane type was limited and contributed to the accident sequence. The lack of experience of the first officer is especially relevant. . . . At the time of the accident, the captain [age 29] had accumulated only about 47 hours of flight experience in the BAe-3101, excluding 13 hours of training and he had received his type rating only 2 weeks before the accident. The first officer [age 27] had accumulated less than 15 hours of flight experience in the aircraft, excluding 4 hours of training, and had completed a competency check only 1 week before the accident. The Safety Board believes that this limited experience probably contributed to the accident.

Petitioners fail to include the following statements of the Board regarding pilot experience:

The flightcrew had considerable recent experience in the Beech Be-99, another twin-engine turboprop airplane with different take-off power setting procedures. This difference may have contributed to the failure of the crew to properly set the RPM levers to the takeoff position before take-off. . . . In summary, the Safety Board believes that the flightcrew's failure to advance the RPM levers to the take-off position resulted from the combined adverse effects of (1) their limited familiarity with the BAe-3101 airplane because of their low time-in-type; (2) the habit interference which resulted from their recent and extensive experience in the BE-99 airplane which uses RPM control procedures; and (3) their efforts to respond expeditiously to their ATC clearance for takeoff.

Additionally, in the Air New Orleans accident, the NTSB reports the following relevant to pilot experience:

The captain's total flying time was approximately 7,500 hours. . . . At the time of the accident, his total time in turboprop airplanes was about 4,000 hours, 60 hours of which were in the BAe-3101 at the time of the accident. . . . The first officer's total flight time . . . was about 3,000 hours. His total time in turboprop airplanes was about 600 hours, 18 of which were in the BAe-3101. The balance of his turboprop time was in the Beech BE-99."

The captain and first officer in the Air New Orleans accident were not inexperienced pilots. As noted above, there are circumstances when a pilot may not have experience in a particular type of aircraft but still be a very experienced pilot. This familiarity in aircraft type is not shown to be related either to age or general experience. The conclusions reached by the FAA regarding the analysis of the Continental Flight 1713 accident are applicable to the Air New Orleans accident as well.

In their fourth supplement, petitioners state that recently United Airlines, Inc. (UAL) has reduced its minimum qualifications for flight officer employment to 350 hours in fixed-wing aircraft. By citing UAL's employment qualifications, petitioners are attempting to show that the level of experience among pilots is decreasing. Petitioners have attached a copy of UAL's Flight Officer Employment Bulletin as an exhibit. Apparently, petitioners would like it believed that the reduction to 350 hours was caused by the supposed shortage of pilots which petitioners attribute to the Age 60 Rule. Petitioners fail to mention that the UAL flight time requirements are the result of an agreement which occurred in the mid-1970's between that company and the Department of Justice following an investigation by the Federal Government of alleged employment

discrimination. The “recent reduction” in flight time requirements has been in effect for over 10 years. The FAA knows of no aviation accidents which have occurred as a result of UAL’s minimum flight time hiring requirements.

Petitioners claim that rigid enforcement of the Age 60 Rule reduces the average experience level among active pilots. As stated above, inexperience is an absolute characteristic in any profession. Granting exemptions to the Age 60 Rule or otherwise increasing the age limitation (e.g., to age 62) would not eliminate an experience shortage. Such a measure would only serve as a device which would temporarily defer a possible “shortage.” Once those who are granted exemptions cease flying (e.g., two years), the identical problem which petitioners propose to solve by the exemption process returns.

This concept is better understood by analyzing the number of pilots who will cease flying as a result of the Age 60 Rule. Future Aviation Professionals Association (FAPA)³ projects the number of pilots who stop flying per year will increase dramatically until the year 2000 when it will eventually level off and then decrease (See Figure 10). In 1988, approximately 500 pilots, who reached the age of 60, discontinued Part 121 flying. FAPA projects the following as a result of the rule:

No. of Retirements	
<u>Year</u>	<u>(to nearest 100)</u>
1990	700
1992	1000
1994	1300
1996	1500
1998	1800
2000	1900
2002	1800
2004	1200

Assuming every airline pilot applies for and receives an exemption for two years or if the rule is increased by two years, then FAPA's projections would change to the following:

No. of Retirements	
<u>Year</u>	<u>(to nearest 100)</u>
1990	0
1992	700
1994	1000
1996	1300
1998	1500
2000	1800
2002	1900
2004	1800
2006	1200

Assuming every airline pilot applies for and receives an exemption for five years or if the rule is increased by five years, then FAPA's projections would change to the following:

No. of Retirements	
<u>Year</u>	<u>(to nearest 100)</u>
1990	0
1992	0
1994	0
1995	700
1997	1000
1999	1300
2001	1500
2003	1800
2005	1900
2007	1800
2009	1200

If one accepts FAPA's projections (See Figure 10), a pilot shortage for the 1990's is possible. However, there is no relationship between the assumed shortage and the Age 60 Rule. The granting of exemptions or otherwise raising the maximum age beyond 60 will not influence a pilot shortage other than deferring it for a limited amount of time. It should be noted that these projections assume that all of the pilots would continue flying in the absence of the Age 60 Rule. The projections do not take into account the number of pilots who would either be medically disqualified or who would willingly enter retirement at age 60.

In their fifth supplement dated March 1989, petitioners cite three incidents which they suggest further support their arguments:

1. On February 24, 1989, United Airlines flight 811, a Boeing 747, experienced an explosive decompression while en route from Hawaii to New Zealand. The pilot in command of the airplane was 59 years old and less than one month from his 60th birthday. The flight involving the decompression was his second-to-last flight before retirement.⁴
2. On March 1, 1978, Continental Airlines flight 603, a Douglas DC-10 overran the departure end of runway 6R at Los Angeles International Airport following a rejected takeoff. As the aircraft departed the wet runway, the left main landing gear collapsed and fire erupted from the left wing area. Of the 184 passengers and 14 crewmembers aboard, 2 passengers were killed and 28 passengers and 3 crewmembers were seriously injured during the evacuation of the aircraft.⁵
3. On May 21, 1978, United Airlines flight 35, a Boeing 747 experienced a power loss in three of four engines while descending into Honolulu. The pilot

in command of the airplane retired approximately two months later after reaching his 60th birthday.⁶

Apparently, petitioners cite these incidents as examples of pilots who are removed from flight status by the Age 60 Rule notwithstanding their capabilities. Apart from the questionable relevance of these incidents, the FAA can not base its decision to grant or deny exemption petitions to the Age 60 Rule on isolated commendable acts. The FAA must make its decision based upon the totality of evidence available to answer the safety implications of aging. The evidence that the FAA considers probative is that which tends to establish psychophysiological behavioral patterns for all pilots across all age cohorts, not that which reflects isolated commendable acts involving one flightcrew.

The FAA agrees that experience can be helpful in abnormal or emergency situations. The pilot of UAL flight 811 was able to land his aircraft safely following a decompression. This action primarily reinforces Part 121 training requirements. Simply stated, the UAL FAA-approved training program worked as planned. Training is required for all crewmembers regardless of age and is a function of the position held. The pilot in command of an airplane operated under Part 121 is required to undergo extensive emergency training as part of initial and recurrent training programs and also to demonstrate knowledge, skill, and judgment during required proficiency checks. What the pilot of UAL flight 811 did would be expected of any captain; that is, to draw on his training, knowledge, skill, experience, and judgment to safely land the airplane.

A similar occurrence on April 28, 1988, involving a Boeing 737 operated by Aloha Airlines, also resulted in a safe landing. That flight landed at Kahului Airport on Maui

following a rapid decompression and loss of a large portion of the fuselage skin. The captain of that airplane was 42 years old and the copilot had just turned age 36.

Petitioners have relied on the testimony of a witness (retired Pan American Captain Sam Enfield) at hearings before the Committee on Public Works and Transportation⁷ for the facts surrounding the Continental flight 603 accident on March 1, 1978. Petitioners assert that the pilot in command of Continental Flight 603 on March 1, 1978, responded to a "severe equipment malfunction" within 1.7 seconds because of his experience. Captain Enfield made statements which are unsubstantiated by the NTSB accident report. Specifically, Captain Enfield testified:

When the plane was rolling down the runway in take-off at approximately 135 knots, they encountered a severe equipment malfunction as a wheel and two tires failed and braking systems faltered. Within 1.7 seconds, Captain Hershe responded fully to the emergency, reversing his engines and bringing the plane to a halt on the wet runway.

The NTSB report states that, "Although V-1 speed is designed to be the go-no-go decision speed in event of an engine failure, the Safety Board believes that pilots have come to regard V-1 as the go-no-go decision speed for any anomaly during the takeoff roll. However, the calculated V-1 speed, by current definition and certification standards, is valid only for circumstances in which the aircraft has its full braking capability. Furthermore, since the aircraft's performance data were obtained through testing on dry runways, there is no assurance that the current concept is adequate when the coefficient of braking is reduced on a wet surface." The report concludes that at the time of the accident, "the runway was wet, but there was no standing water." Finally, the report

states that, "in this accident, the captain heard a loud metallic bang and the flight data recorder indicated that this occurred 1.2 seconds before the aircraft reached V-1 speed. The captain was, therefore, faced with the need for immediate action. He had no time to evaluate the significance of the loud bang and vibration if he was to successfully reject the takeoff. However, it became evident during the Board's investigation that the noise and vibration were associated with a tire failure and that the aircraft could undoubtedly have been flown off the runway successfully."

Petitioners state that the pilot in command of UAL flight 35 on May 21, 1978, by virtue of his skill and experience, was able to operate the aircraft (following power loss on three of four engines) and bring it to a safe landing at Honolulu. No NTSB accident report was available, but the incident report (FAA Form 8020-27) filed following the occurrence states that the FAA attempted to obtain flight deck crew statements but was not able to do so. Further, investigating teams which were sent from UAL, Pratt and Whitney, and Boeing were "unable to duplicate the engine condition; No. 1 engine was changed in HNL (Honolulu) because of over temperature, Nos. 2, 3, and 4 engines were changed in SFO (San Francisco), which indicates that (subsequent to the landing at Honolulu) the aircraft was successfully flown back to San Francisco without incident before the change (of those three engines))."

The FAA can see no evidence that experience was a determining factor in the success of this flight. Since this occurrence took place over 10 years ago, additional information simply could not be found. It is apparent from the above information that the evidence is not available to the FAA which would indicate the full extent of the flight

deck crew involvement in the incident. A copy of FAA Form 8020-27 has been placed in Docket No. 25008.

In any event, petitioners continue to submit material which is based upon isolated incidents. As stated above, the FAA cannot base its decision to grant or deny exemption petitions to the Age 60 Rule on isolated commendable acts. The FAA must make its decision based upon the totality of evidence available to answer the safety implications of aging. The evidence that the FAA considers probative is that which tends to establish psychophysiological behavioral patterns for all pilots across all age cohorts, not that which reflects isolated commendable acts involving one flightcrew.

Petitioners' Methodology

Petitioners have relied heavily on data contained in petitioners' Exhibit 72.⁸ These data are used to support the petitioners' arguments that older pilots appear to have fewer accidents than younger pilots. To understand why these data appear to show this, the limitations of petitioners' data and analytical methods must be carefully considered. The FAA has used these same data to construct Figure 2.

The petitioners' pilot population data are taken from the annually updated FAA Statistical Handbook of Aviation, Table 7.10. These data tabulate, by age group and highest category of pilot certification held, the estimated active⁹ population of student pilots, private pilots, and pilots who hold commercial or airline transport pilot certification. Petitioners have elected to use only the commercial and airline transport pilot data for their study.

Petitioners' accident data have apparently been obtained from the NTSB, though no specific source document has

been cited. The FAA assumes that these accident data represent the general aviation accidents incurred by pilots of appropriate respective age groups during the time of interest and that the pilots held commercial or airline transport pilot certification at the time of the accident. To illustrate one difficulty with petitioners' methods, the FAA used the data from the second column of petitioners' Exhibit 72 to construct Figure 3, which represents the average number of active pilots (per year) who hold commercial or airline transport pilot certificates in each age group. Note the large number of pilots in the 60-plus age group. This is apparently the result of petitioners' use of pilot certificate data rather than an actual count of pilots who are flying for compensation or hire.

Once a pilot certificate is granted, it is granted for life (unless revoked for cause by FAA). Commercial pilot certification and airline transport pilot certification represent higher demonstrated skill levels than student or private pilot certification. But there is no requirement to hold any higher than a class 3 medical certificate (biennial medical examination) to exercise, as a private pilot, the privileges of a pilot certificate in flying even the largest, most complex jet aircraft, as long as the pilot does not fly for compensation or hire. To carry persons or property for compensation or hire, on the other hand, one must possess at least a commercial pilot certificate and have passed at least a class 2 medical examination within the past year. Serving as pilot in command in operations conducted under Part 121 and certain operations conducted under Part 135 of the FAR (airline and commuter operations and commercial users of large aircraft) requires an airline transport pilot certificate and a current class 1 medical certificate. Unfortunately, we do not have a data base that provides the number of active pilots who flew for the

airlines over a given time period. There is the data base on pilot skill certification used by the petitioners and the data base developed in the "Flight Time Study." The FAA believes that an analysis of the "Flight Time Study" data sheds more light on the question of age-related accident propensity than the analysis offered by the petitioners, as explained below.

Petitioners' Exhibit 72 employs an analysis method which compares accident rates by age group for pilots for the period from 1982 to 1985. These data appear to indicate a below average accident rate for pilots in both the 55-year old to 59-year old age group and the 60-plus age group.

What petitioners' statistics reveal appears to be suggestive, but what they conceal is vital. Petitioners' numbers are based upon the total number of active pilots and the total number of accidents. They do not take into account the amount of miles or hours flown (i.e., exposure) by each age cohort. At first glance, it would appear that the pilots in the 60-plus age group have a below average accident rate since they make up 9.64 percent of the total pilot population, but are responsible for only 8.76 percent of the total number of accidents. However, these statistics are of little significance since they do not show the percentage of flying done by the 60-plus age group. If we compare the number of hours or miles flown by the 60-plus age group, it is possible that we would come up with a totally different conclusion. If, for example, the pilots in the 60-plus age group contributed to 3.0 percent of the total amount of flying, they would have a substantially higher than average accident rate since they are responsible for 8.47 percent of the total number of accidents.

Little significance can be attached to what petitioners' Exhibit 72 shows because it does not show the percentage

of hours or miles flown compared to the percentage of accidents per age cohort.

The "Flight Time Study"

The "Flight Time Study" contains a data base covering the period 1976-1980, which was constructed as follows. In the course of medical certification, pilots report their estimated cumulative total civil flight time and the time he or she has flown in the last 6 months. Using these FAA medical records, the data were screened and adjusted for different examination frequencies to provide data on pilot age, total flight time, recent flight time (annualized), and class of medical certification. Thus, the total active pilot population in the period 1976-1980 constitutes one part of the "Flight Time Study" data base.

Using all NTSB accident records for the entire 1976-1980 period (some 20,000 general aviation accidents), three data sets were constructed: (1) accidents for which a pilot's total flight time had been recorded; (2) those for which recent flight time had been recorded; and (3) accidents for which both were available from the official records. All accident data included in these three data sets also include pilot age at the time of the accident and class of medical certification. (Commercial aviation accidents, which represent only a small fraction of the total, were excluded from this study.)

The "Flight Time Study" data base contains over 3 million "pilot years" of flying during which some 300 million pilot hours were flown. In that period, over 20,000 general aviation accidents occurred, reports for the vast majority of which (perhaps 90 percent) contained the flight time data required for the study.

Sources of Potential Inaccuracy

While virtually all of the official FAA medical records contain the information needed for this study, the same is not true of the NTSB accident records. Accordingly, absolute accident rates in the "Flight Time Study" are understated by some 10 percent and are not directly comparable from one category to the next. For example, a slightly different set of data results when comparing accident rates based on pilot total time with those based on pilot recent time since a few accidents included in one rate calculation may not have sufficient information to be included in the other. These differences, too, are generally small and are on the order of 10 percent.

Annualization of recent flight time data may also give rise to errors. For example, a class 3 medical certification application records flight time in the past 6 months. These flight hours are first doubled to approximate a year's time and then redoubled since only half the pilots holding class 3 medical certification were recertified that year. An accident record, on the other hand, records flight time in the past 90 days and is quadrupled to obtain an estimate of the most recent annual flight time by that pilot.

A last source of potential error lies in the fact that these pilot medical certificate application flight data are self-reported and not validated by the issuing official. These estimates are almost surely in error to some degree, though it is difficult to see why they would substantially bias any study of accident rates as a function of age. As shown in the "Flight Time Study," these data are more accurate than the minimum needed, although comparison of age-specific accident rates calculated on the basis of the recent flight time data subset will yield marginally different values when compared with rates based on the total flight time data subset.

Results of the Study

Figure 4 displays petitioners' data (the same as Figure 3) presented in 10-year increments to permit comparison with similar data contained in the "Flight Time Study." Figure 5 shows similar data from the "Flight Time Study" indicating that there are more active pilots who maintain class 1 or class 2 medical certification in their 30's than in any other 10-year group. After that age, pilots "drop out" of the active ranks, similar to what petitioners show in Figure 4. Note, however, the large discrepancy between the "Flight Time Study" and petitioners' data in the age 60 and up category, where petitioners show about 300 percent more active pilots. By definition, then, at least 3 out of 4 of the "commercial" or airline transport pilots whom petitioners have placed in the 60 and up category for their study are only eligible to fly as private pilots. The FAA does not believe that these are representative of the airline pilots the petitioners seek to have exempted from the rule, but are likely to be pilots who at one time achieved commercial or airline transport pilot certification, stopped flying for whatever reason, and have recently resumed pleasure flying. Data from the "Flight Time Study" do not include the same group, since all of these data are obtained from medical certificate applications for class 1 or class 2 certificates. Regardless of the explanation for this large discrepancy, one thing is clear: the medical certification of the pilots in the "Flight Time Study" was carried out to airline standards. However, the medical certification status of petitioners' pilot data base is unknown. We believe this difference to be of some significance.

As pilots grow older, their individual flying experience builds. Holders of class 1 or class 2 medical certificates, "Flight Time Study" data show, build their experience more rapidly (and to a higher total number of flight hours)

than do holders of class 3 medical certificates. Class 1 or class 2 certificate holders average just under 200 hours per year of flight time in their 30's and have maximum average annual flight time of nearly 270 hours per year in their 50's. Holders of class 3 medical certificates, on the other hand, average only about 30 flying hours per year in their 30's, and peak at just over 50 hours per year in their 50's. This should not be surprising, since none of the pilots holding class 3 medical certificates are professional pilots. It is likely that most of those holding class 1 or class 2 certificates do fly for a living. Simply stated, professional pilots do far more flying than private pilots and are required to have a class 1 or class 2 medical certificate to do so.

Figure 6 graphically illustrates the differences in experience level for different age groups of pilots holding class 1 or class 2 medical certificates. Only about 30 percent of pilots in their 30's have more than 1,000 hours of flying experience, but over 75 percent of pilots who maintain class 1 or class 2 medical certification over the age of 60 have that experience level. In fact, over 40 percent of the active pilots still holding class 1 or class 2 medical certificates beyond the age of 60 have more than 5,000 hours of flight experience. It is this experience pool that petitioners seek to tap.

Accident Risk for Older Pilots

The "Flight Time Study" permits a sharp focus on the group of pilots the petitioners claim have relatively low accident risk. (This is claimed to be true, in part, because of their high level of flight experience.) We are also able to isolate only those active pilots who have maintained class 1 or class 2 medical certification and who would be

eligible, should petitioners' arguments prevail, for commercial flying (assuming, of course, that they possess appropriate skill ratings). These data are shown in Figure 7, where accident risk per hundred thousand hours of flight is displayed as a function of age for the most experienced group of pilots, those with more than 5,000 hours of flight time. The lowest accident risk is seen for pilots in their 40's and a dramatic increase in risk of accident is seen for pilots who are in their 60's. It is quite clear that our analysis does not support petitioners' claim that experienced pilots beyond the age of 60 have a low accident rate. In fact, their accident rate is substantially higher than any younger age of similarly experienced pilots who maintain medical certification which makes them eligible to fly for the airlines. This analysis, while not solving the problem of why this group of pilots experiences a higher rate of accidents, does show that (for the period between 1976 and 1980) very experienced pilots over the age of 60 who have obtained class 1 or class 2 medical certification do experience substantially more accidents for each hour they fly than younger pilots.

Petitioners' second assertion is that the greater experience of this age 60 and over group of pilots at least offsets, and may even outweigh, accident risk from incapacitation or skill deterioration when comparing their accident risk to that of the younger pilots who would replace them. Younger pilots who are less experienced are first employed as flight engineers or copilots and spend considerable time flying in those capacities before being given the additional responsibility of pilot in command. Since the "Flight Time Study" shows that pilots with less experience generally have higher accident rates than more experienced colleagues, an assessment of petitioners' second assertion requires that we broaden the experience

“win v” through which we review the “Flight Time Study” results. Figure 8 shows that, as expected, broadening the criteria to include younger pilots who have flown at least 1,000 hours and have obtained class 1 or class 2 medical certificates results in consideration of a higher-accident risk for the 20-29 year age group. Despite this, however, the data do not substantiate the petitioners’ claim. Experience factors do not outweigh the increased accident risk associated with age beyond 60 years, nor do the older, more experienced pilots have a lower accident risk than 20-29 year old pilots who have class 1 or class 2 medical certificates.

Past Studies Relevant to the Issue

National Research Council Study of Car Crashes

The adverse effect of aging on accident rates is not unique to flying. Indeed, other studies utilizing statistical analysis of both automobile and aircraft accidents show a disproportionate increase in accidents among persons above age 60. In 1988, the National Research Council (NRC) published a definitive report¹⁰ which included a detailed examination of automobile crash patterns and crash risk as a function of driver age. The study concluded (Summary, pp. 50-51) that “older drivers show an involvement in crashes that is more extensive than that of middle-aged drivers, though not as bad as that of drivers in their teens and early twenties . . . If the trend in increased driving continues, the traffic safety picture for older persons could worsen.”

Safely piloting an airplane is a more complex task than driving an automobile, but both require knowledge, quick reflex actions, good judgment, long- and short-term recall

and a myriad of other skills and abilities. For many reasons, these skills and abilities deteriorate as we grow older. Accident rate data represent a quantitative compilation of occurrences where skills and abilities were, for one reason or another, inadequate to cope with a specific situation at a given time.

The NRC Report presents accident rate data which mirror closely the effect of age as discussed in the "Flight Time Study." The data consist of several figures, (herein reproduced from the NRC Report as Figures 9a, 9b, and 9c) which bear striking similarity to the FAA analysis of the data in the "Flight Time Study." Graphically, the accident data for both aircraft and automobiles show a "U"-shaped curve across age cohorts. The pattern is consistent in that the accident rate among automobile drivers and pilots tends to decrease with age until it levels off and then experiences an upswing in both aircraft and automobile accident rates at approximately age 60. This pattern shows how older drivers are relatively more involved in accidents than all but the very youngest when risk of involvement is measured per unit of exposure, in this case per hundred million miles driven. Responsibility for (as opposed to mere involvement in) accidents follows the same trend, i.e., the oldest drivers present the highest risk of all ages. Similarly, the NRC Report shows evidence of a relatively complex driving skill (a left turn in traffic) deteriorating with age from the mid-20's upward. The research suggests that younger driver/pilot accidents are likely due to inexperience and risk-taking behavior, while older driver/pilot accidents are more likely due to increasing decrements in physical and judgmental skills. These data strongly reinforce the validity of the analysis of the "Flight Time Study" data and the conclusions reached as a result of the analyses.

The NRC Report also explicitly notes the need to analyze such data with respect to exposure to risk, e.g., miles driven, rather than with respect to population and accidents per thousand drivers. Our analysis uses such an exposure-to-risk based methodology such as accidents per hundred thousand hours flown, whereas petitioners mistakenly use a misleading measure, that is, accidents per thousand pilots.

The Work of Siegel and Mohler

The question of proper measurement of aviation accident risk is not new. Siegel and Mohler discuss the effect of age on general aviation accidents.¹¹ They cite data from an earlier paper as the basis for their claim that “older pilots do not experience a higher accident rate than their younger colleagues.”¹² They explicitly note that the data they cite “does not contain ‘exposure’ data such as the number of hours flown per year, which may be less for pilots over sixty.” But instead of exploring further such a reasonable explanation for the low accident rate of older pilots, they offer a peculiar explanation amounting to sheer speculation: “. . . perhaps older pilots are more cautious (thus achieving an older age) and ‘expose’ themselves to such things as adverse weather and unwarranted low-level maneuvers less often. . . .”

More recently, Mohler notes that “studies of the relationship of pilot age to accidents in general aviation repeatedly demonstrate that with increasing age, fewer accidents occur.”¹³ Citing FAA and NTSB data for 1978 and 1979 (two of the five years covered in the “Flight Time Study”) he purports to show that accident rates per 1,000 pilots generally decline with age using the same methodology as used in petitioners’ arguments.¹⁴ Mohler notes that

“some complain that the accident rate data do not list the number of hours flown by the pilots . . . however . . . how a pilot flies . . . is far more important than the mere number of hours in the air (exposure). ‘Exposure’ as a factor in flight safety has significance in regard to what the exposure is to: for example, repeated unwarranted low-level maneuvers, the center of thunderstorms, and other hazardous flight activities . . . higher chronological ages are not associated with increased risks in aircraft accidents.” The FAA finds Mohler’s reasoning difficult to understand in view of the explicit findings known to have been published by FAA and others which specifically refute this logic. Some examples are briefly discussed below.

“Israel Air Force Study”

In their third supplement dated November 1988, to the public docket in the instant case, petitioners put forth a recent study by physicians at the Israel Air Force Aeromedical Center in support of their arguments.¹⁵ There is a significant potential for being misled when reading the petitioners’ version of this material. Specifically, discussing the work of the Israel Air Force, petitioners state the following in their submittal:

The authors conclude that ‘even if there was a 10-fold increased incidence of disease-related, in-flight sudden incapacitation . . . ,’ replacing an experienced pilot with a novice would result in an increased accident rate due to human error. This is especially true since ‘most cases of in-flight sudden incapacitation are not disease related.’

The relevant portion of the “Israel Air Force Study”, on the other hand, reads as follows:

. . . even if there was a 10-fold increased incidence of disease-related, in-flight sudden incapacitation and

sudden death, replacing *the 30-year old fighter pilot with a novice would probably result in an increased accident rate (Table III).*" [Emphasis added. Table III compares rates of sudden death, in-flight incapacitation, and fatal air accidents due to human error for two groups of pilots: those between the ages of 20 and 26 years, and those who are between 30 and 33 years old.]

When reviewed at the primary source, it is clear that the work of the "Israeli Air Force Study" is addressing a problem that has little relevance to the instant case. This is not surprising because the issues addressed by military and civilian flight surgeons are often different and their pilot populations and operational considerations are frequently dissimilar. Such is the case here, where the oldest pilot of interest to the Israelis was about half the age of 60, which is the age of interest in the instant case.

The FAA acknowledges, however, that the Israel Air Force methodology is one which petitioners seek to have applied to U.S. airline pilots. If the experience of older pilots, when weighed against likely increases in pathology leading to sudden in-flight incapacitation, is a significant factor, this quantitative approach might bear further exploration. Unfortunately, the experience factor does not appear to lead to reduced accidents. Thus, the merits of this approach are not apparent.

Studies by Harper and Booze

Harper has shown that increased pilot age is associated with increased accidents.¹⁶ His study compares two populations: pilots who have had accidents, and pilots who have not. He compared both populations for 4 age groups: 34 and under, 35-44, 45-54, and 55 and over. In his words, "the linear increase in accident rate with increased age

is apparent." His data show that, beyond the age of 35, an increasingly disproportionate fraction of pilots is involved in accidents. Over the age of 55, for these populations, the accident rate is more than twice what would be expected based on population size alone. As in many other studies, both the entire pilot population and the entire general aviation accident record were used for the analysis. No selection of pilots on the basis of class of medical certification or type of pilot certificate was attempted.

In 1977, Booze published a study which, in his words, "represents an effort to bring together occupation, age, exposure and other descriptive data on a scale of analysis never before available in order to appraise the relationships."¹⁷ For the year studied (1974), Booze showed clearly that there was an increased risk of accident with increasing age when considering all pilots. (He did not separately study pilots as a function of either pilot certification or class of medical certificate but considered all active pilots as a group.) Noting that "several studies [which he cited] have demonstrated an increase in accident rates with age," he comments on his findings: "The trend of the total age-specific rates shows an increase with age of approximately four times from the youngest to the oldest age interval. The experience within the major occupational groups is generally supportive of this pattern" Data he presents in this work clearly document an increase with age in accident risk for all pilots, as well as for those pilots with the highest total experience he studied (over 2,000 hours of flight time) and for those pilots with the highest amount of recent flight time (over 200 hours).

Fundamental errors can be made in ascribing risk to a given group of pilots if the measure of that risk is not carefully thought through. It is clear from the open litera-

ture, some of which is referenced above, that mere measurement of a number of accidents per subset of population is inappropriate unless all other things are equal. When the variation in exposure to risk is larger than or comparable to the variation in accident rates in the two population subsets being compared, it is quite possible that the variation in accident risk is the result of the differences in exposure. The FAA has determined, from the data given in "The Flight Time Study," that different age groups fly a different number of hours per year, and thus have different exposures to risk. These differences are far greater than the small age-related differences shown by petitioners (Figure 2). These factors must be taken into account before drawing conclusions about the effect of age on accident rate. One accepted methodology is to measure accident risk per 100,000 hours flown by each age group, as is shown herein. (See Figures 7 and 8.)

Dr. Koonce's comment, briefly discussed in the public comment section above, claimed methodological problems in the research behind the "Flight Time Study" and proposed alternative ways of measuring pilot safety across age groups. Dr. Koonce criticized the study because it did not separately analyze the accident records of pilots holding class 1 and class 2 medical certificates. Dr. Koonce stated that data presented in the "Flight Time Study" are not relevant to pilots operating under Part 121 of the FAR because the study did not present data regarding pilots with class 1 and class 2 medical certificates. Additionally, Dr. Koonce stated that the statistics presented as accident rates are in fact global rates (merely an average of all accidents divided by all flight time for a given group), and the data are totally insensitive to likelihood of individuals having accidents as a function of his/her age and recent flight experience.

The methodology used in the "Flight Time Study" was based on a research design developed by a professor at Johns Hopkins University.¹⁸ The methodology expresses accident rates as the number of accidents per hour of exposure, which is a well established measure in both FAA and NTSB safety studies. This reflects the concept that a measure of safety performance should express the number of accidents in relation to some measure of exposure for an affected population. The "Flight Time Study" compares homogeneous groups by controlling for the amount of flying experience in terms of both recent and total flight time for each age and certificate category of pilot. Thus, the results in the "Flight Time Study", based on recent flight time, are already controlled for the amount of flying undertaken by pilots in a stratum. The method employed in the "Flight Time Study" also implicitly allows for the number of pilots in a stratum because recent flight hours (used as the denominator) is the product of the average flight hours per pilot times the number of pilots.

The methodology proposed by Dr. Koonce multiplies the number of accidents times the number of pilots and divides them by the number of recent flight hours. This methodology provides a misleading answer. For example: assume there are two groups of pilots. Each pilot has flown 1,000 hours in the last year, and each has had one accident. One group consists of 10 pilots, and the second group consists of 20 pilots. Regardless of the group from which a pilot is selected, it is clear that the accident risk is 1 in 1,000 hours of flight. The same is true when measuring the performance of the groups rather than the individual pilot members of each group. For each 1,000 hours flown by members of each group, one would expect one accident. But Dr. Koonce would have the accident risk of the pilots in the larger group be twice that

of the smaller group because there are twice as many pilots in the larger group.

Based upon all of the studies discussed above, we conclude that the older pilots' edge in experience does not offset the undetected physical infirmities associated with the aging process. Notwithstanding that most pilots who are approaching or have passed age 60 report that their health is excellent and that they do not experience any physical or cognitive limitations which would prevent them from continuing their flying career, the research on aging indicates that there is often a sharp decline in physical and cognitive performance after age 60.

Conclusions

Petitioners argue that the experience of pilots beyond the age of 60 outweighs any increased accident risk due to incapacitation or deterioration of skills with age. The basis for their argument appears to be centered on the data that the FAA has reproduced herein as Figure 2. It is clear, based on a review of the methodology used, that any conclusions drawn from Figure 2 are suspect. The FAA has cited a number of papers published by FAA and others in the scientific literature which have reached conclusions contrary to those put forth by the petitioners. Indeed, it is well established that older pilots are more prone to accidents than younger pilots (notwithstanding the youngest group of pilots) when even modest account is taken of the amount of exposure to risk undergone by all pilots. The data presented in the "Flight Time Study" dramatically illustrates the increased accident risk with age for that very pilot group, those holding class 1 and class 2 medical certificates, that petitioners argue should be exempted from retirement at age 60.

The FAA does not contend that persons over the age of 60 cannot, by virtue of that fact alone, meet medical requirements for pilots in command in operations under Part 121. Indeed, FAA does not believe that this is the case. What the FAA has shown is that the pool from which the older pilots would be drawn has a markedly higher accident rate than younger pilots, all other things being equal. What is needed, and what petitioners have failed to show, is a way to discriminate between those who contribute to the adverse trend of increasing accidents from those who do not. Clearly, there is substantial scientific evidence which indicates that the greater experience of the pilots who have reached or passed age 60 does not outweigh the increased risk of incapacitation or skill deterioration which accompanies their seniority.

Petitioners continue to hold themselves up as examples of healthy, aging pilots selected as worthy of exemption from the generally applicable rule. The petitioners have been endorsed by a panel, whom they have selected, as being fit from a medical/psychological standpoint, irrespective of the fact that they are either near or over age 60. One of the petitioners, however, manifested significant coronary heart disease and had undergone invasive treatment prior to evaluation by the panel. Though mentioned within the text of some medical documents submitted as part of an appendix to the petition, this diagnosis, appears to have been ignored or overlooked by the panel when it formulated its recommendations and endorsements. The petitioner did not himself fully note his hospitalization and treatment on one of the medical history forms included in the pertinent appendix. Another petitioner, within 7 months of this evaluation and endorsement by the panel, had manifested significant valvular heart disease with major cardiac arrhythmia, which no longer permitted airman medical certification.

In spite of the advances that have been made in medical diagnosis, treatment, and in primary prevention techniques, some of which are cited by the petitioners, it is still true that death and disease increasingly progress with increasing chronological age. It is also known that some mental, psychomotor, emotional, intellectual, and physical attributes necessary for enhanced flightcrew performance deteriorate with advancing age. Regardless of the individual exceptions that may be cited, all available data indicate that the population as a whole is subject to an increasing rate of disability or death due to physical changes or disorders and deterioration in skilled performance associated with increasing age.

The aging process involves countless variables, is largely unpredictable, and generally is not measurable. The question of operational privileges for aging pilots is not comparable to the question of assessment of younger airmen with specific medical conditions. Although a number of individuals with known medical conditions have been returned to air carrier duties, their circumstances are not comparable with those of an individual who has reached an advanced age. For the person with known disease, the prognosis for the disease can be assessed and specific tests or evaluations identified to monitor the condition. Special issuance of medical certification is granted to airmen who have certain known medical conditions or static defects that are disqualifying under the established standards of the FAR. This practice does not compromise safety and does not demand similar consideration with respect to the Age 60 Rule. Where granted, the condition in question has been clearly identified, and the agency has been able to develop a means of assessment and surveillance specially designed to demonstrate the individual's capabilities and to identify any adverse changes. If that is not possible,

certification is not granted. Such is not the case in aging, since there are no generally applicable medical tests that can, at this time, adequately determine which individual pilots are subject to incapacitation secondary to either acute cardiovascular or neurological events or to more subtle adverse conditions related to cognitive functioning.

In consideration of the foregoing, I find that the petitioners have failed to provide reasons why the granting of such exemptions would not adversely affect safety. In addition, I find that the petitioners have failed to demonstrate that the action to be taken, if an exemption was granted, would provide a level of safety equal to that provided by the rule from which the exemption is sought. I find that a grant of exemption is not in the public interest. Therefore, pursuant to the authority contained in Sections 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of Mr. Raymond C. Fay, Bell, Boyd & Lloyd, on behalf of Courtney Y. Bennett, John H. Baker and 41 other current and former pilots, for an exemption from § 121.383(c) of the Federal Aviation Regulations is denied.

Robert L. Goodrich
Director, Flight Standards
Service

Issued in Washington, D.C., on May 26, 1989

Footnotes

1.Golaszewski, R., Report No. DTRS57- 83-P-80750, June 30, 1983, Federal Aviation Administration, Washington, D.C. 20591.

2.NTSB Accident Report No. NTSB/AAR-88/09, "Continental Airlines, Inc., Flight 1713, McDonnell Douglas DC-9-14, N626TX, Stapleton International Airport, Denver, Colorado, November 15, 1987." NTSB Accident Report No. AAR-82-8, "Air Florida, Inc., Boeing 737-222, N62AF, Collision with 14th Street Bridge, Near Washington National Airport, Washington, D.C., January 13, 1982." NTSB Accident Report No. NTSB/AAR-88/06, "Air New Orleans, D.B.A. Continental Express, Flight 962, British Aerospace 3101, N331CY, New Orleans, Louisiana, May 26, 1987."

3.Special Report, Airline Pilot Job Search Strategy, prepared by FAPA, 4959 Massachusetts Blvd., Atlanta, GA. 30337, copyright 1989.

4.Judith Valente, "Tense Touchdown," *The Wall Street Journal*, March 1, 1989. p.1, cols. 1-4. Laura Parker, "United Pilot Recounts Struggle to Land Jumbo Jet Crippled Over the Pacific," *The Washington Post*, March 3, 1989, p. A12, cols. 1-3.

5.NTSB Accident Report No. NTSB-AAR-79-1, "Continental Air Lines, Inc., Flight 603, McDonnell Douglas DC-10-10, N68045, Los Angeles International Airport, California, March 1, 1978."

6.No NTSB accident report is available regarding this incident because it did not meet the criteria and was not classified as an accident. However, an Accident/Incident Record form 8020-27 was filed by the FAA on May 26, 1978.

7.Congressional Hearings by the House Subcommittee on Aviation, Committee on Public Works and Transportation on July 18 and 19, 1979.

**8. Joint appendix filed pursuant to Melvin M. Aman, et al., v. FAA, January 1988. **

**9. "Active" pilots are those who have received any class of medical certificate within the past 25 months and are thus able to exercise at least private pilot privileges. **

**10. *Transportation in an Aging Society*, Transportation Research Board, National Research Council, Washington, D.C. 1988. **

**11. Siegel, P.V. and Mohler, S.R., "Medical Factors in U.S. General Aviation Accidents, "Report No. AM 69-2, Federal Aviation Administration, Washington, D.C. 20591. **

**12. Mohler, S.R., et al., "Aircraft Accidents by Older Persons", Report No. AM 67-22, Federal Aviation Administration, Washington, D.C. 20591. **

**13. Mohler, S.R., "Study Shows Fewer Airplane Accidents as Pilots Grow Older," *Newsletter*, Aircraft Owners and Pilots Association, Frederick, MD 21701, December, 1982. **

**14. Interestingly, though writing for an audience of private pilots, the data Mohler used were limited to consideration of pilots having more advanced certification: commercial and air transport certificates. Doing this, as pointed out earlier in this work, artificially inflates the number of older pilots in the data base without a corresponding increase in average exposure at those ages. Using the same methodology for *all* active pilots shows that accident rates per 1,000 pilots increases with increasing age. **

**15. Froom, Paul et al., "Air Accidents, Pilot Experience and Disease-related In-flight Sudden Incapacitation," *Aviation, Space, and Environmental Medicine*, March, 1988, pp.278-281. **

**16. Harper, Charles R., "Physical Defects of Civilian Pilots Related to Aircraft Accidents," *Aerospace Medicine*, September, 1964, pp.851-856. **

17.Booze, C.F., "Epidemiologic Investigation of Occupation, Age, and Exposure in General Aviation Accidents," *Aviation, Space, and Environmental Medicine*, November, 1977, pp.1081-1091.

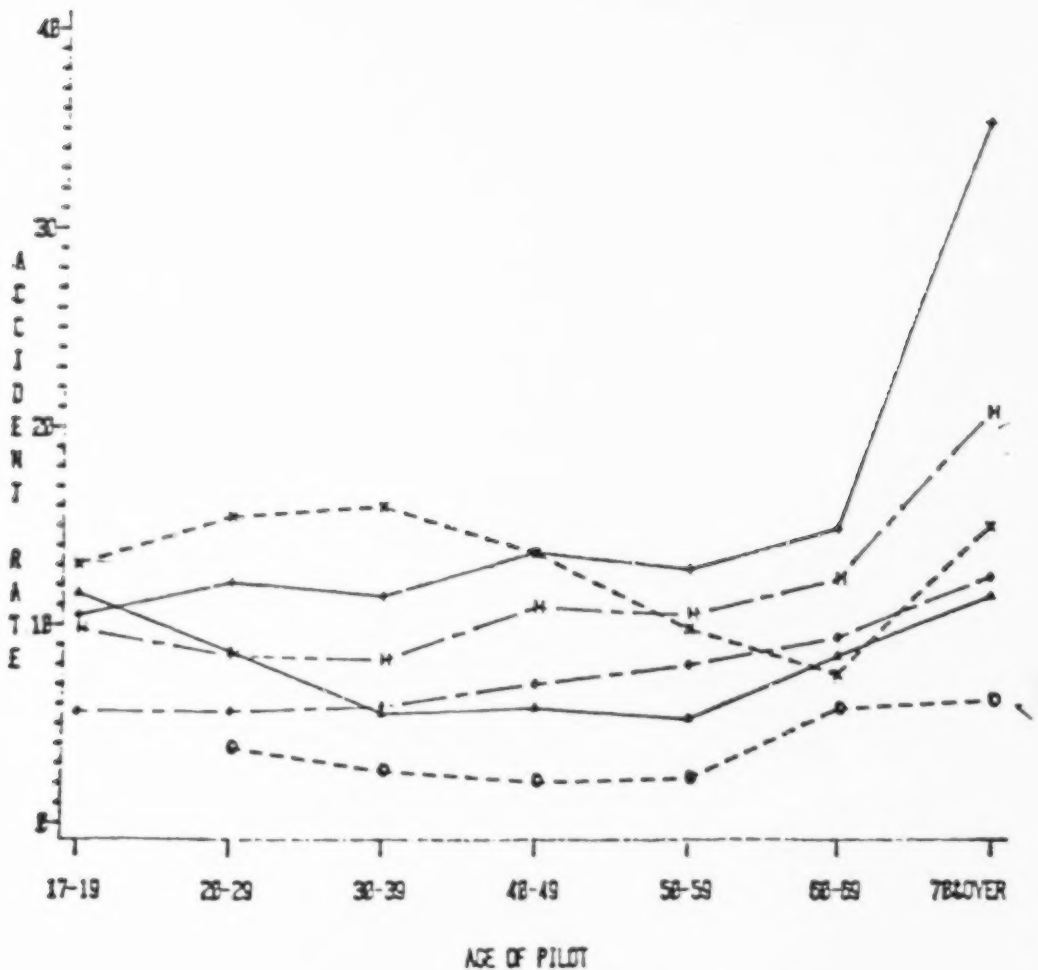
18.Brookmeyer, R., "Recommendations and Critique of Statistical Methodologies for General Aviation Accident and Pilot Occupation Data", Department of Biostatistics, Johns Hopkins University, October, 1981.

*Materials relevant to the preparation of this document have been placed in public docket #25008.

Figure 1

1976-1980

CLASS I, II AND III PILOTS OVERALL ACCIDENT RATE
NUMBER OF ACCIDENTS PER 100,000 RECENT FLIGHT-HOURS
FROM ASF-200 FAA HIRARCHY SYSTEM-TOTAL HOURS



LEGEND: FTIME * ALL TIME * 1-100 * 101-500 * 501 & OVER * 501-1000

Figure 2

Petitioner's Exh. 72: Accident Rates 1982-1985

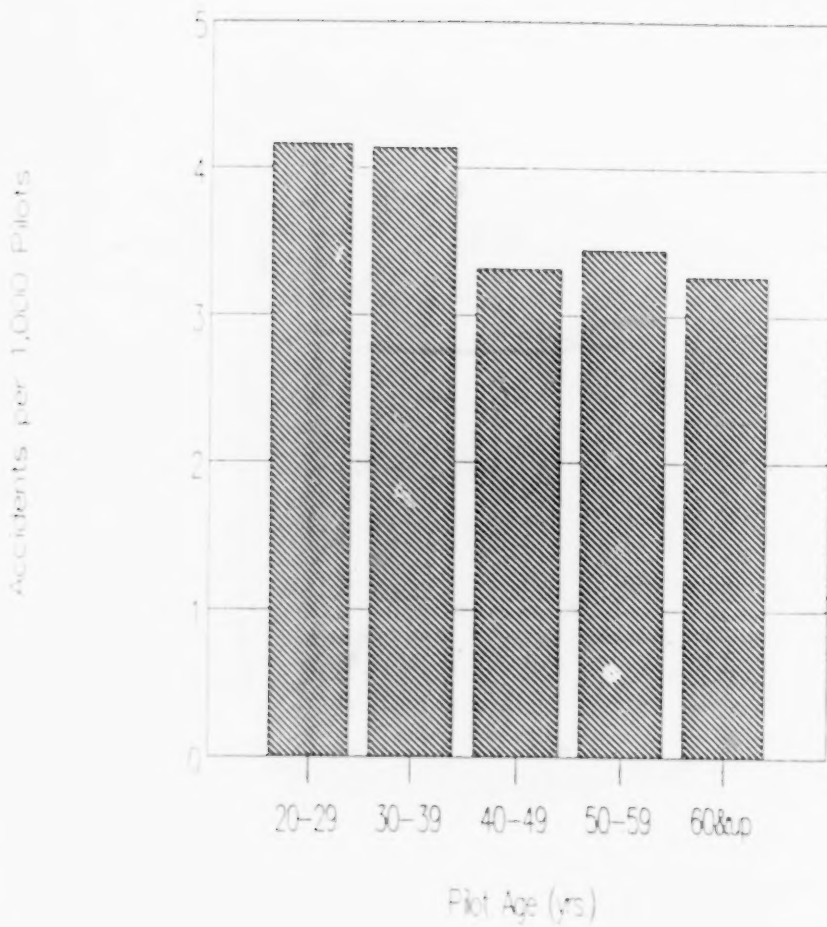


Figure 3

Petitioner's Exh. 72: Pilot Age Distribution, 1982-1985

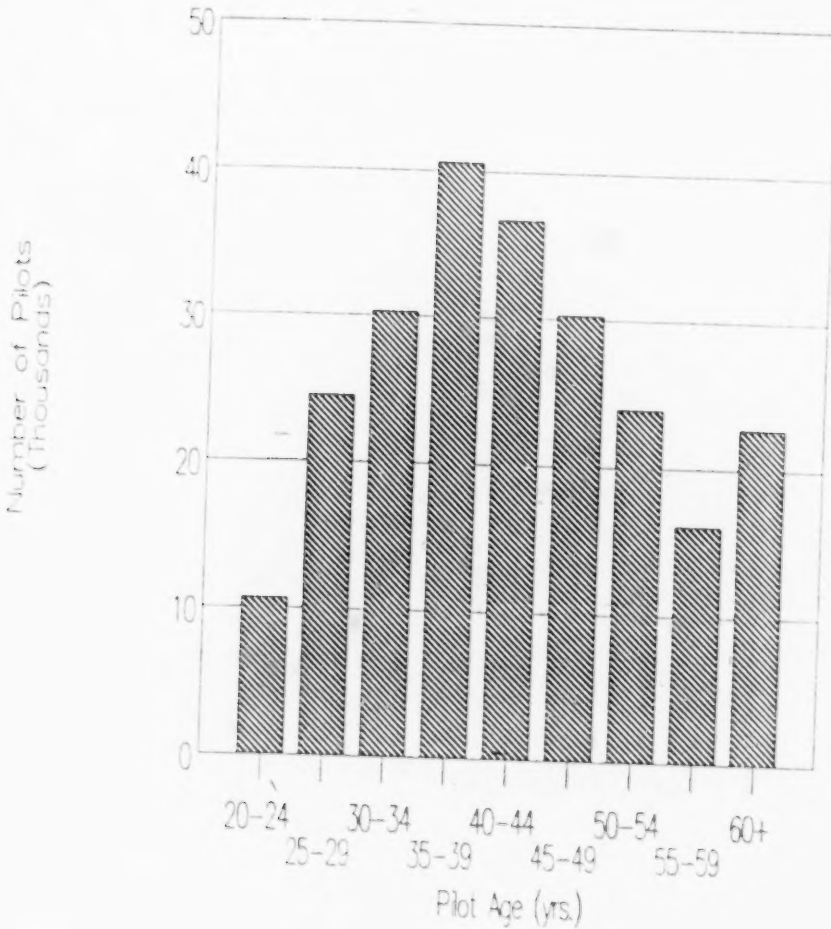


Figure 4

Petitioner's Exh. 72: Pilot Age Distribution, 1982-1985

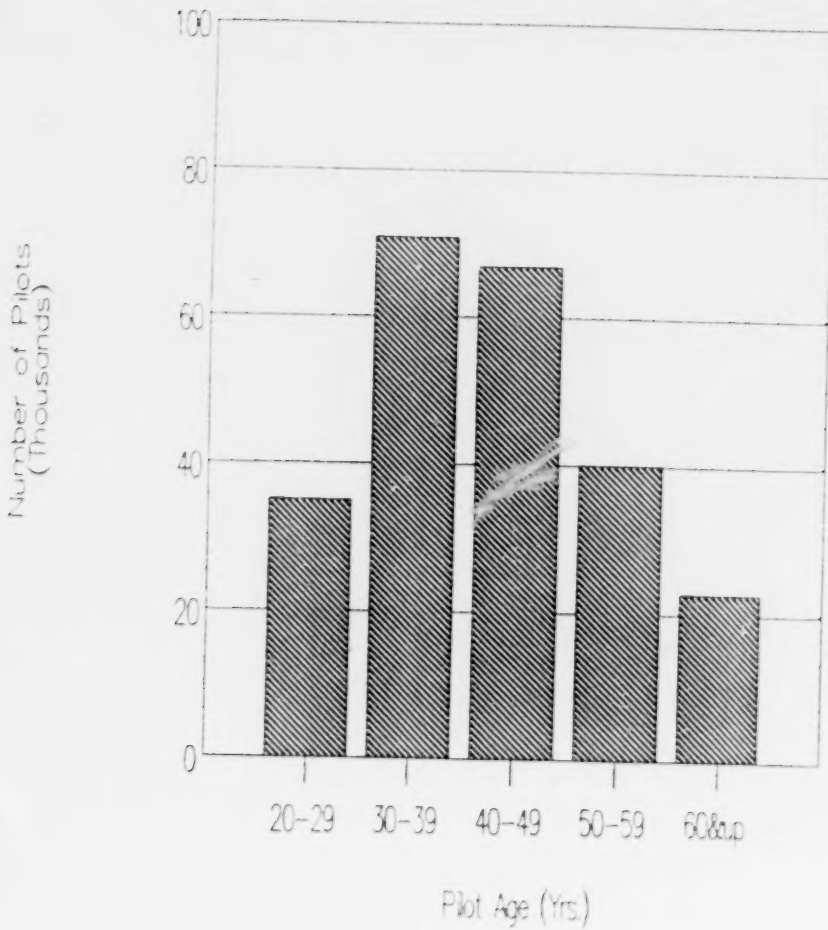


Figure 5

Pilot Age Distribution, 1976-1980

Class 1 & 2 Medical Certification

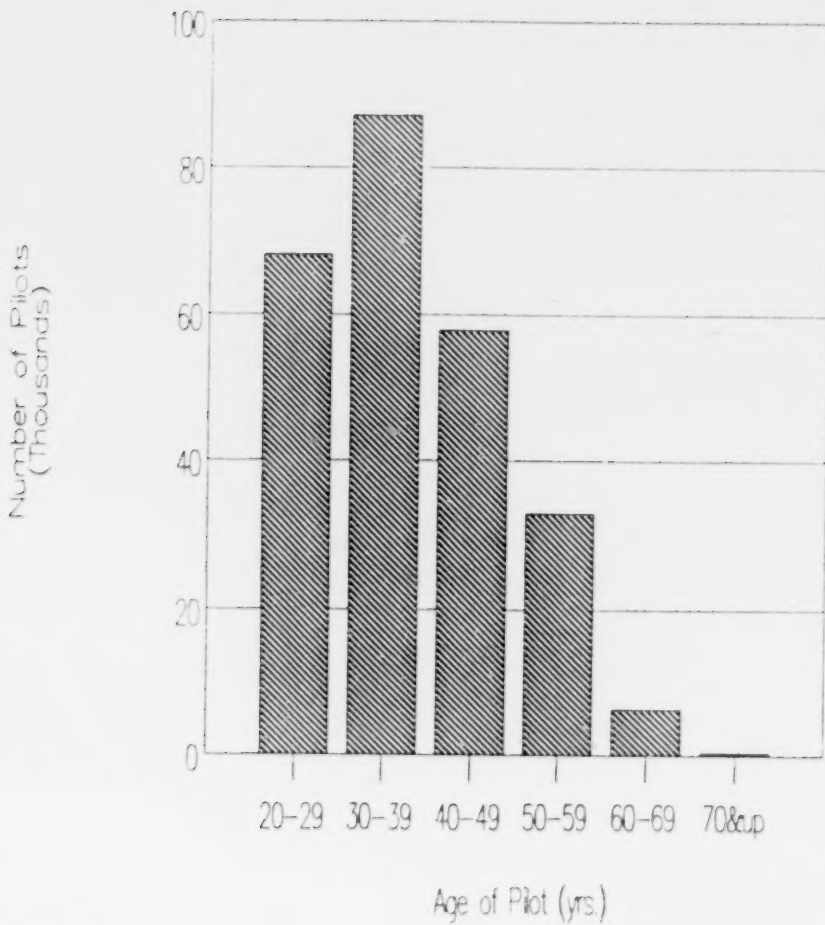


Figure 6

Percent of Pilots Having Indicated Flight Experience (hrs.), by Pilot Age

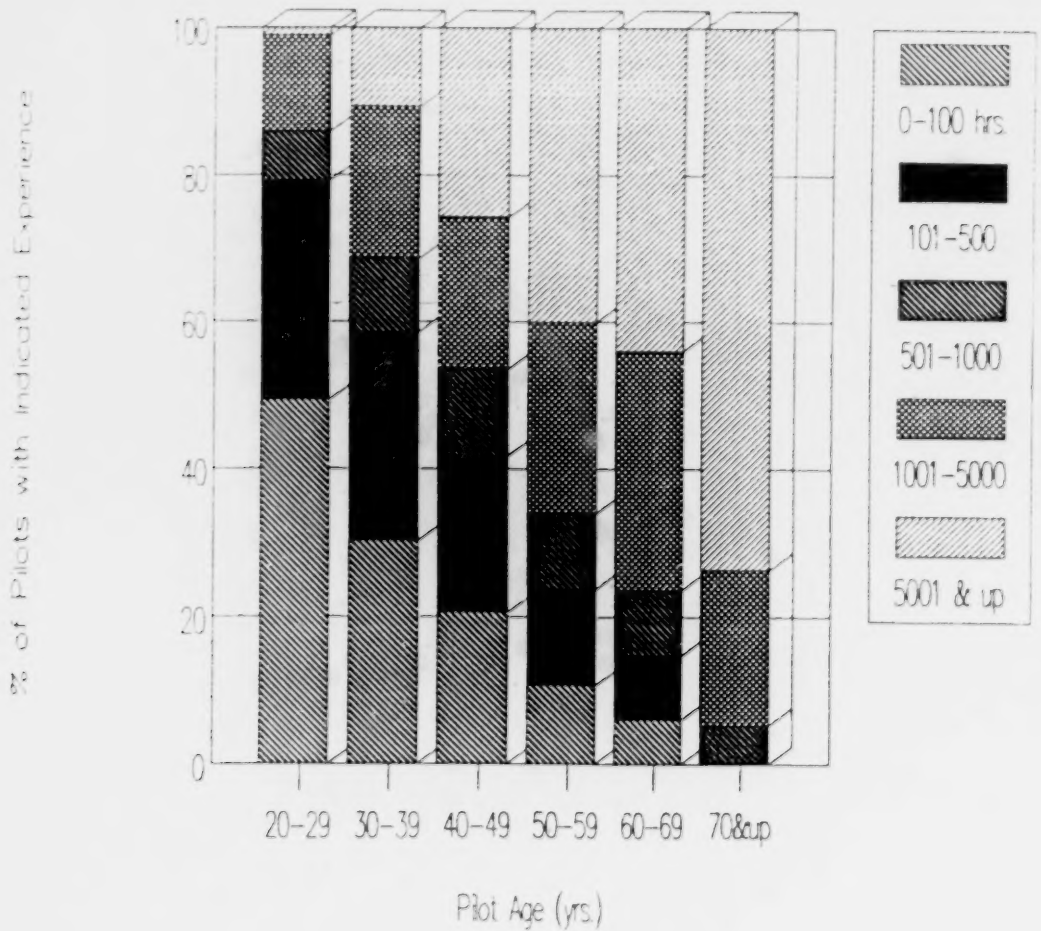


Figure 7

Accident Risk, Class 1 & 2 Medicals

Pilots with >5000 Hrs. Total Time

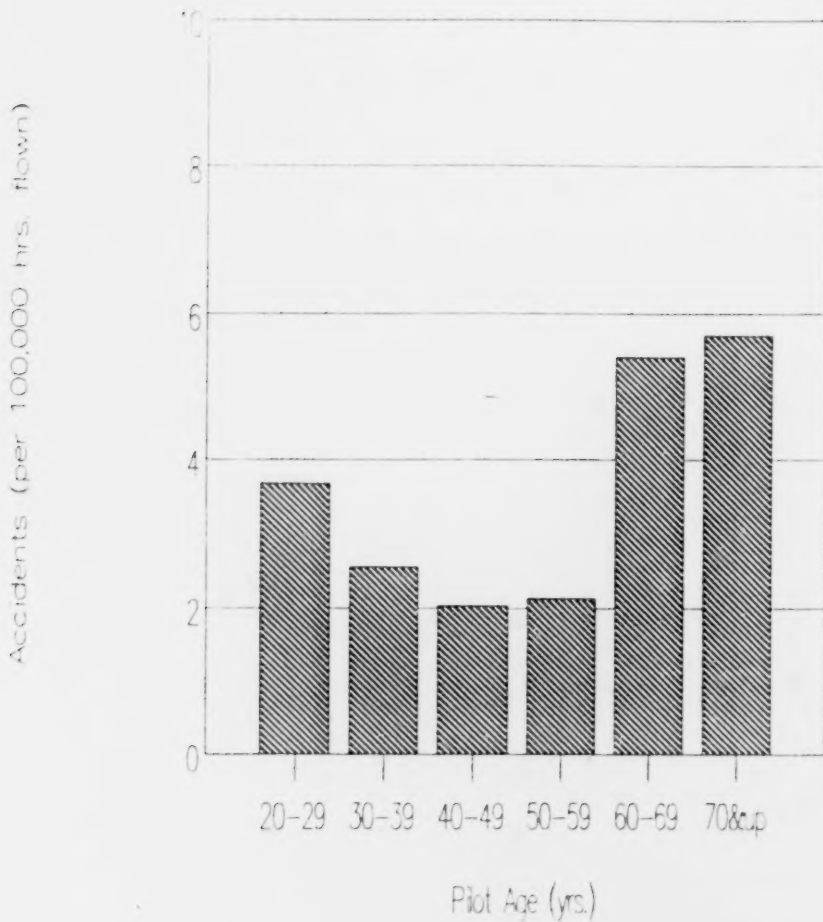


Figure 8

Accident Risk, Class 1 & 2 Medicals

Pilots with >1000 Hrs. Total Time

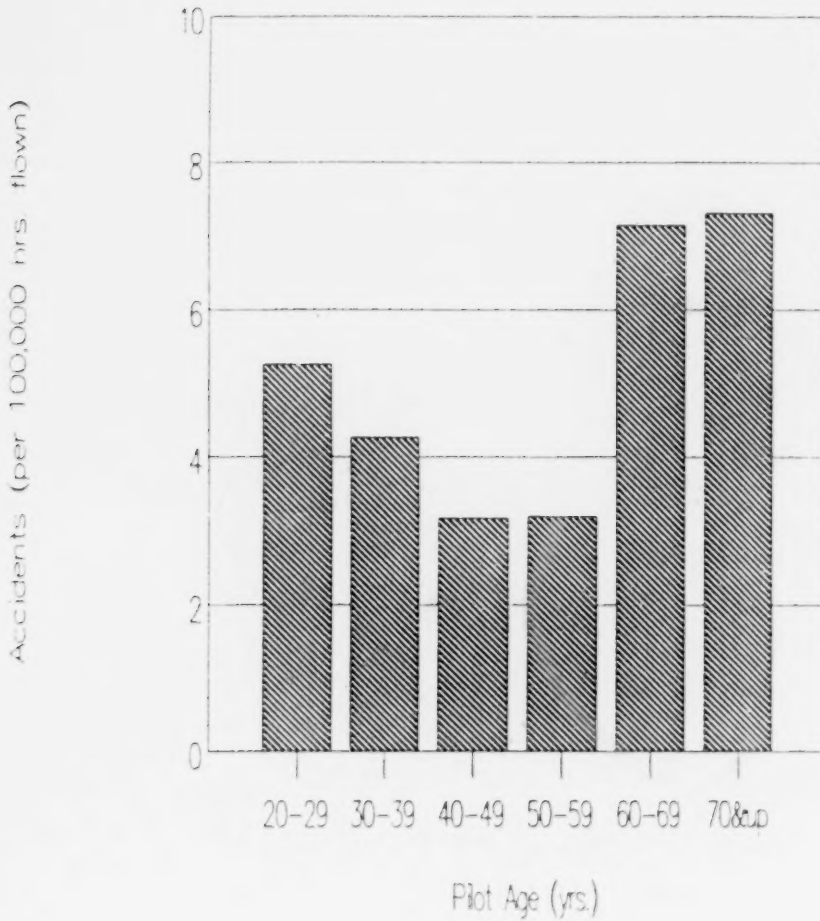


Figure 9

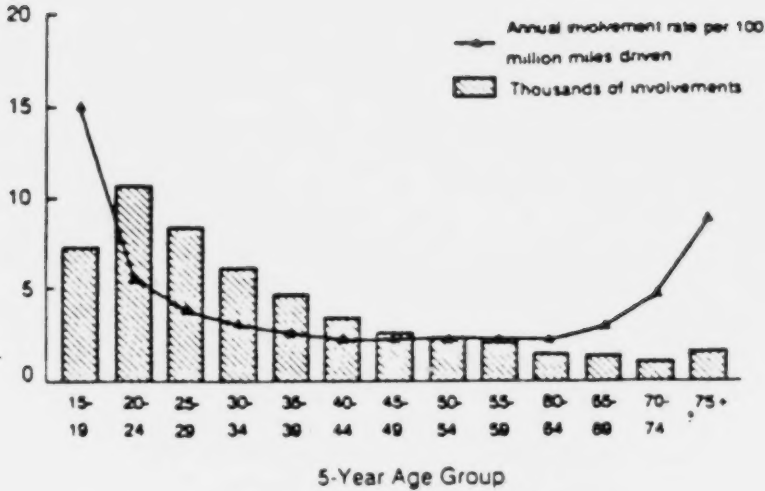


FIGURE 9a Driver involvements in fatal crashes and fatal involvement rates by age, 1983 (NHTSA and FHWA data).

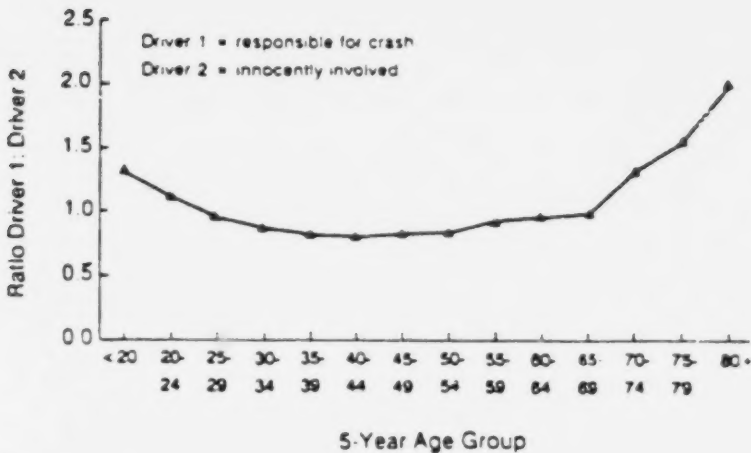


FIGURE 9b Driver responsibility for multivehicle accidents, 1983 (McKelvey et al. 1987).

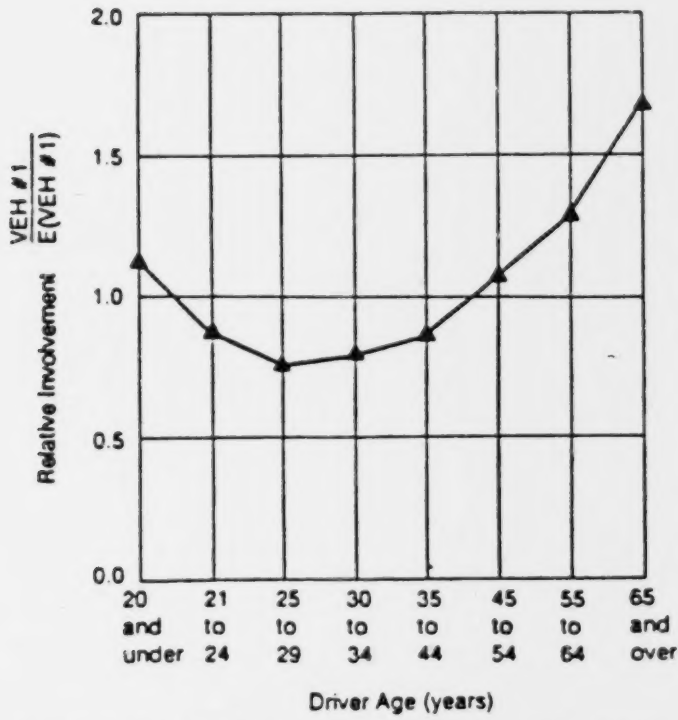
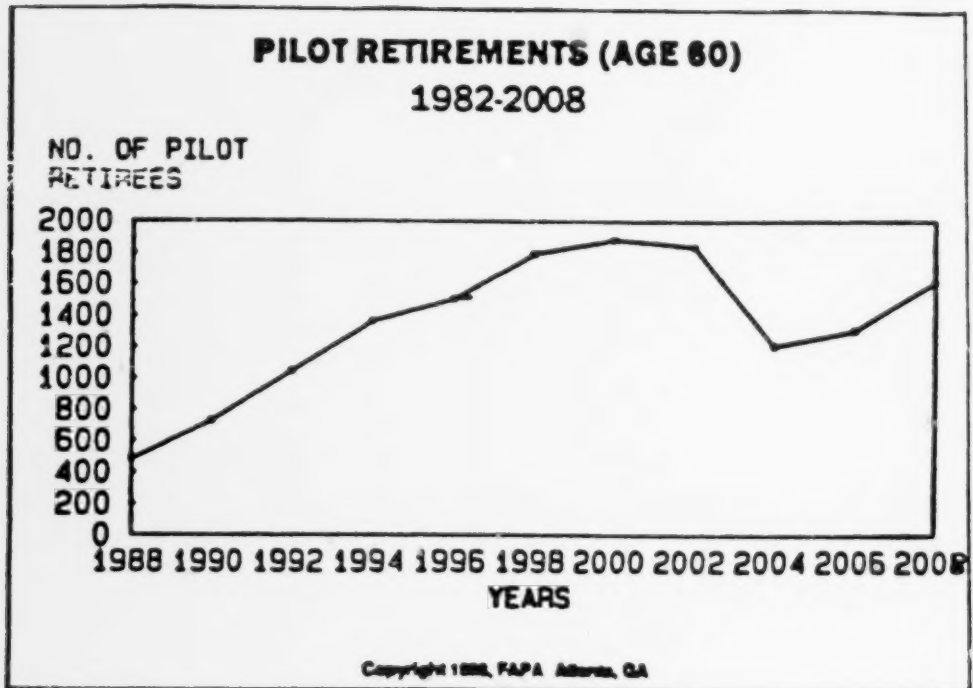


FIGURE 9c Relative accident involvement by driver age for left-turn accidents (Maleck and Hummer 1986).

Figure 10



(3)

No. 90-1049

Supreme Court, U.S.
FILED
MAR 4 1991
OFFICE OF THE CLERK

In the Supreme Court of the United States

OCTOBER TERM, 1990

JOHN H. BAKER, ET AL., PETITIONERS

v.

FEDERAL AVIATION ADMINISTRATION, ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO
THE UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT

BRIEF FOR THE RESPONDENTS IN OPPOSITION

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QUESTION PRESENTED

Whether the court of appeals properly rejected petitioners' challenge to the Federal Aviation Administration's denial of their request for an exemption from an FAA regulation (14 C.F.R. 121.383) prohibiting persons over the age of sixty from piloting large commercial airliners.



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In the Supreme Court of the United States

OCTOBER TERM, 1990

No. 90-1049

JOHN H. BAKER, ET AL., PETITIONERS

v.

FEDERAL AVIATION ADMINISTRATION, ET AL.

*ON PETITION FOR A WRIT OF CERTIORARI TO
THE UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT*

BRIEF FOR THE RESPONDENTS IN OPPOSITION

OPINIONS BELOW

The opinion of the Court of Appeals for the Seventh Circuit is reported at 917 F.2d 318. Pet App. 1a-19a. The order of the Administrator of the Federal Aviation Administration (FAA) is unreported. Pet. App. 21a-83a.

JURISDICTION

The order of the Court of Appeals for the Seventh Circuit affirming the FAA's decision was entered on October 31, 1990. The petition for a writ of certiorari was filed on January 2, 1991. This Court's jurisdiction is invoked pursuant to 28 U.S.C. 1254(1).

STATEMENT

1. In 1959, pursuant to its statutory authority to promote safety in air commerce, the Federal Aviation Administration (FAA) promulgated a regulation (now codified at 14 C.F.R. 121.383(c)) prohibiting individuals over the age of sixty from piloting commercial airline jets seating more than thirty passengers. The FAA explained that the "age sixty" rule is based upon: 1) studies indicating that sudden incapacity and other risks due to medical impairments become significantly more frequent when a person reaches the age sixty; and 2) the fact that the possibility of such incapacity and other problems occurring cannot be accurately predicted as to any specific individual. See Pet. App. 28a-29a; 24 Fed. Reg. 9767 (1959). See also 49 Fed. Reg. 14,695 (1984).

The Federal Aviation Act of 1958 provides that the FAA "may grant" exemptions to its general rules if it "finds that such action would be in the public interest." 49 U.S.C. 1421(c). Although over the years a number of individuals have sought exemptions from the "age sixty" rule, none has ever been granted. See Pet. App. 2a.

2. In 1986, petitioners filed for exemptions from the FAA's age sixty rule. Specifically, petitioners argued that a battery of tests devised by an expert panel (assembled by petitioners) could be used as a basic protocol for assessing the fitness of pilots over the age of sixty. See *Aman v. FAA*, 856 F.2d 946, 949 (7th Cir. 1988). Petitioners claimed that: 1) pilots over sixty who passed the battery of tests were no more likely to cause an accident due to sudden incapacitation or undetected deterioration than a pilot under age sixty; and 2) older pilots who passed the tests were actually safer than their younger counterparts when their respective experience was taken into account. *Id.* at 952. See also Pet. App. 2a. The FAA denied the petition for exemption and petitioners sought review (under 49 U.S.C. 1486(a)).

3. The Seventh Circuit upheld the FAA's ruling in part. The court held that the FAA "adduced substantial evidence supporting its rejection of the contention that the petitioners' protocol, combined with existing methods of operational testing, would screen out all increased risks of incapacitation or undetected skill deterioration among pilots older than 60." *Aman v. FAA*, 856 F.2d at 957; see also *id.* at 954. The court, however, held that "the FAA failed to set forth a sufficient factual or legal basis for its rejection of the petitioners' claim that older pilots' edge in experience offsets any undetected physical losses." *Id.* at 957. The court remanded the case to the agency to provide findings and explanations with regard to that claim. *Ibid.*; see also Pet. App. 2a. Further, the court ordered the FAA to explain why the agency had a more flexible exemption policy for pilots under the age of sixty with heart disease or alcoholism problems. 856 F.2d at 957; Pet. App. 7a.

4. To implement the Seventh Circuit's directive, the FAA opened a 30-day comment period to receive comments on the issue of "age versus experience." Pet. App. 24a. Approximately 178 comments were received. In addition, petitioners filed three additional supplements to explain why they should be granted exemptions. *Ibid.*

After reviewing the comments and the additional information provided by the petitioners, the Administrator issued an order denying the exemptions and explaining the reasons for the denials. Pet. App. 21a-83a. The order analyzed the comments and additional evidence, and concluded that there was not sufficient proof that the experience of a pilot offsets the "danger of deterioration" associated with the aging process. *Id.* at 8a, 24a-66a. The Administrator found the comments and studies relied upon by petitioners to be faulty and inconclusive. See, e.g., *id.* at 40a-46a, 50a-58a, 66a. The Administrator also concluded that the anecdotal evidence submitted by petitioners (regarding heroic acts per-

formed by pilots approaching or over the age of sixty) did not evidence a pattern from which any valid assumptions could be made, and did not demonstrate that experience offsets the dangers associated with sudden incapacitation and undetected deterioration. *Id.* at 46a-50a.

Further, the Administrator explained that the agency's policy regarding exemptions to the age sixty rule was not inconsistent with the agency's approach to special issuances for pilots under the age of sixty with an identifiable medical condition:

For the person with known disease, the prognosis of the disease can be assessed and specific tests or evaluations identified to monitor the condition. * * * Where [a special issuance] is granted, the condition in question has been clearly identified, and the agency has been able to develop a means of assessment and surveillance - specifically designed to demonstrate the individual's capabilities and to identify any adverse changes. * * * Such is not the case in aging, since there are no generally applicable medical tests that can, at this time, adequately determine which individual pilots are subject to incapacitation * * *.

Pet. App. 68a-69a.

Pursuant to 14 C.F.R. 11.25, the FAA held that the petitioners failed to provide reasons why the granting of such exemptions would not adversely affect safety or would otherwise provide a level of safety equal to that provided by strict adherence to the age sixty rule. Pet. App. 69a.

5. Petitioners again sought review of the FAA's order in the Seventh Circuit. The court of appeals affirmed the FAA's order. The court agreed with the Administrator that petitioners' studies and analysis did not present "a persuasive statistical record." Pet. App. 4a. The court held that petitioners' anecdotal evidence was not especially relevant given

the fact that none of the pilots before the court were ones who performed the “aeronautical miracles.” *Id.* at 3a-4a. The court recognized it was petitioners’ burden to show that they deserved an exemption, and concluded that petitioners failed to carry their burden of establishing that the Administrator acted improperly in concluding that the public interest in safety would not be served by granting the exemptions sought. *Id.* at 3a, 8a-9a. The court stated, “we cannot justify a conclusion that, on average, experience sufficiently offsets possible age-related impairment of health or skills to clearly guarantee a net constancy or increase in safety.” *Id.* at 2a.

Further, the court rejected petitioners’ challenge to the agency’s rationale for issuing exemptions to younger pilots with specific medical problems that can be safely monitored, while not issuing exemptions to pilots over sixty. The court found that petitioners had not demonstrated that the agency’s distinction was invalid “either theoretically or practically.” Pet. App. 7a.¹

ARGUMENT

The FAA’s “age sixty” rule, prohibiting persons over the age of sixty from piloting large commercial passenger jets, has been upheld by every court that has addressed its validity. Moreover, every court that has examined the FAA’s strict approach to exemptions from the age sixty rule has upheld the agency’s exemption policy, as well as the specific exemption denials. Here, the court of appeals correctly upheld

¹ Judge Will dissented. Pet. App. 9a-19a. The dissent argued that the FAA must further justify its finding that pilots over sixty “are significantly more prone to medical catastrophe than other pilots.” *Id.* at 14a. Further, the dissent argued that the FAA policy of refusing to grant any exemptions to the age sixty rule was not warranted by the evidence or by common sense. *Id.* at 17a.

the FAA's decision in ruling that petitioners had failed to demonstrate adequately that granting them exemptions from the age sixty rule would benefit public safety. The present case was correctly decided and does not conflict with the decision of any other court of appeals, or of this Court. Accordingly, further review by this Court is not warranted.

1. The FAA adopted the "age sixty" rule in 1959 based upon concerns about the danger posed to the public when a pilot of a large commercial jet is suddenly physically incapacitated. After extensive study, the Administrator found that "sudden incapacitation due to heart attacks or strokes become more frequent as men approach age sixty and present medical knowledge is such that it is impossible to predict with accuracy those individuals most likely to suffer attacks." *Air Line Pilots Ass'n Int'l v. Quesada*, 276 F.2d 892, 898 (2d Cir. 1960), cert. denied, 366 U.S. 962 (1961). Because of the high risks at stake (which are elevated by the fact that older pilots with established seniority tend to fly the largest and fastest airplanes), the Administrator barred any person from piloting large commercial jets after reaching his sixtieth birthday. *Ibid.*; 24 Fed. Reg. 9767-9768 (1959). See, also *Rombough v. FAA*, 594 F.2d 893, 897-898 (2d Cir. 1979).²

Since adoption of the age sixty rule, numerous parties have challenged the reasonableness of the rule and its factual predicate. However, every court to address the issue has upheld the FAA's regulation. See, e.g., *Starr v. FAA*,

² The age sixty rule does not, however, require the pilot to retire. He may still continue to pilot private and commercial jets outside of the coverage of 14 C.F.R. Pt. 121 (see 14 C.F.R. 121.1), and can, if certified, continue to work in the cockpit of large commercial crafts covered by Part 121 in a position other than pilot (e.g., flight engineer or navigator). See *Aman v. FAA*, 856 F.2d at 948; 14 C.F.R. 121.385-121.389.

589 F.2d 307, 312-314 (7th Cir. 1978); *O'Donnell v. Shaffer*, 491 F.2d 59, 61-62 (9th Cir. 1974); *Air Line Pilots Ass'n Int'l v. Quesada*, 276 F.2d at 898. The courts have recognized that although there may be difference of opinion and conflicting evidence, Congress has granted the FAA the statutory responsibility for air passenger safety and that the agency's rule is adequately supported and well within the agency's authority. See *Rombough v. FAA*, 594 F.2d at 899-900; *Starr v. FAA*, 589 F.2d at 312-313; *Air Line Pilots Ass'n Int'l v. Quesada*, 276 F.2d at 898.

Despite the unanimous judicial acceptance of the age sixty rule, the FAA has recognized that the rule is not indelible. The agency has continued to research and examine whether new advances in medical science can identify individual pilots over the age of sixty who do not pose a risk to public safety. See *Starr v. FAA*, 589 F.2d at 312 (the FAA has "not shirked its duty" to examine new advances).³ The courts have recognized the FAA's continuing efforts and have held that the FAA may continue to adhere to the age sixty rule "as long as it continues to consider new advances in medical technology." *Starr v. FAA*, 589 F.2d at 314.

2. Petitioners here, like others before them, have sought to circumvent the FAA's age sixty rule by seeking exemptions from the rule under 49 U.S.C. 1421(c), which states the FAA "may grant" exemptions to its general rules if it "finds that such action would be in the public interest." Petitioners' arguments do not seek merely to justify individual exemptions, but rather are frontal attacks on the reasonableness of adhering to the age sixty rule. See Pet. 18-19; *Aman*, 856 F.2d at 949 n.2. The FAA's response to

³ For example, the FAA reviewed both a Navy study of the health histories of 1,000 pilots, and a study by the National Institutes of Health (see 49 U.S.C. 1421 note (1982)), and determined to retain the age sixty rule. See *Aman v. FAA*, 856 F.2d at 948.

petitioners and others seeking exemptions has been that it will not grant the exemption unless the agency determines that there is a medically reliable method of determining the risk of sudden incapacitation and other pertinent risks. See Pet. App. 67a-69a.

Up until the present date, the FAA has not been satisfied that the medical tests or other procedures suggested by interested parties, or independently investigated by the agency, can adequately assess the risks of sudden impairment. And without such a determination, the agency has "simply chosen what it considers the safer" approach — *i.e.*, to continue to adhere to the age sixty rule. See *Starr v. FAA*, 589 F.2d at 312. See also Pet. App. 67a-69a; *Aman v. FAA*, 856 F.2d at 954; *Keating v. FAA*, 610 F.2d 611, 613 (9th Cir. 1979).

In light of these factors, it is hardly surprising that every court to rule on the reasonableness of the FAA's exercise of its administrative discretion in this context has upheld the policy, as well as the individual exemption denials. See, *e.g.*, *Keating v. FAA*, 610 F.2d at 613 ("the medical tests proposed by Keating are not sufficiently reliable to compel his employment in a position of great stress and responsibility where sudden incapacitation could jeopardize many lives"); *Rombough v. FAA*, 594 F.2d at 899 (the "psychological and physiological changes due to age cannot be tested with sufficient reliability to justify the safety risks involved"); *Gray v. FAA*, 594 F.2d 793, 795 (10th Cir. 1979) ("At some point, the state of the medical art may become so compellingly supportive of a capacity to determine functional age equivalents in individual cases that it would be an abuse of discretion not to grant an exemption. It is apparent to us, however, that present medical opinion is far from unanimous on the question."); *Starr v. FAA*, 589 F.2d at 314 ("The FAA has the discretionary power to establish a policy that there will be no exemptions granted

until it is satisfied that medical standards can demonstrate an absence of risk factors in an individual sufficient to warrant a more liberal application of the Age 60 Rule.”).

3. Petitioners contend that the agency’s refusal to issue any exemption to the age sixty rule conflicts with the Act’s exemption provision. See Pet. 9-12. However, 49 U.S.C. 1421(c) only empowers the Administrator to grant exemptions. It states that the FAA “may grant” exemptions to its general rules if it “finds that such action would be in the public interest.” There is no statutory entitlement to an exemption and no statutory mandate to issue one. See *Starr v. FAA*, 589 F.2d at 312 (the statutory language “does not mean that the administrator *must* grant exemptions from the challenged regulation”). Moreover, whether to issue an exception clearly involves an exercise of policy-making and discretion by the agency vested by Congress to ensure the public safety. See 29 U.S.C. 1421(b).

Petitioners cite the Seventh Circuit’s *Starr* decision as authority that the agency must issue some exemptions. See Pet. 9. However, that opinion expressly holds that it can be reasonable for the FAA to refuse to grant exemptions to some rules. See *Starr v. FAA*, 589 F.2d at 311-312. Further, the court explained the virtue of adopting a no-exemption policy in certain circumstances. *Id.* at 312. Indeed, the *Starr* court held that the issue was whether the FAA’s no-exemption policy to the age sixty rule was an abuse of discretion, and the court correctly concluded that it was not. *Id.* at 312-314.

4. Petitioners further assert that the FAA’s refusal to grant exemptions is impermissible in light of the medical evidence, studies and anecdotal evidence they have submitted. Pet. 18-22. However, as explained above, the courts have uniformly upheld the FAA’s policy of denying exemptions until it determines that medical science can adequately assess the age related risks on an individual pilot basis.

See pp. 6-7, *supra*. In petitioners' initial challenge, the Seventh Circuit similarly upheld the agency's general policy and, more specifically, held that petitioners' medical protocol did not sufficiently eliminate the risks associated with sudden incapacitation and undetected deterioration, and thus did not show the FAA's continued adherence to its policy to be unreasonable. See *Aman v. FAA*, 856 F.2d at 953-954. See also Pet. App. 2a.

Petitioners are in reality asking this Court to second guess the agency's evaluation of the medical evidence. That is entirely contrary to the ordinary rules of deference, but is especially inappropriate here, where the issues pertain to scientific, medical and safety related issues, and where the degree of proof required to merit an exemption is itself inherently a policy decision. See *Rombough v. FAA*, 594 F.2d at 899-900; *Starr v. FAA*, 589 F.2d at 314.

The focus of the remand in this case was to address whether pilot experience offsets the health related risks. The FAA considered the numerous comments and evidence submitted, but was not convinced that experience compensated for the risks associated with sudden incapacitation and undetected deterioration. See Pet. App. 66a. Indeed, the agency found that when the youngest pilots were excluded from the analysis, and experienced "young" pilots were compared with experienced older pilots, the data demonstrated that the older pilots were more prone to accidents. See *id.* at 66a-67a.

In addition, petitioners submitted anecdotal evidence regarding the heroic deeds performed by experienced pilots near or over the age of sixty. See Pet. App. 46a-50a. The FAA properly concluded that several isolated acts do not create a pattern from which any general conclusions or assumptions could be drawn. *Id.* at 47a. The agency agreed that experience can be helpful in emergencies, but concluded that petitioners' anecdotal reports and other evidence simply did not demonstrate that experience offsets the danger of

sudden incapacitation and other decrements which the FAA concluded are greater once a pilot reaches the age of sixty. *Id.* at 47a, 67a.

The court of appeals correctly upheld the FAA's decision that the evidence did not demonstrate the invalidity of the FAA's determination that experience does not offset the health risks associated with age. See Pet. App. 7a-9a. Even the dissenter in the court of appeals recognized that it is highly unlikely that the incremental value of experience could offset the problems associated with "sudden incapacitation." *Id.* at 14a. Accordingly, the decision below was correct and no further review is warranted.

5. Petitioners also contend that the decision below is in conflict with *Airmark Corp. v. FAA*, 758 F.2d 685 (D.C. Cir. 1985). Pet. 14-15. *Airmark* simply holds that the FAA must apply consistent criteria in granting or denying petitions for exemptions in like cases. 758 F.2d. at 691-692. However, the FAA is applying consistent criteria to exemptions from the age sixty rule: there will be no exemption unless and until the FAA determines that medical science can assess the individual pilots' risks of sudden incapacitation and other pertinent risks. Petitioners' claim of a conflict is thus incorrect.⁴

With regard to exemptions, petitioners also assert that the agency's willingness to grant special issuances to some airline pilots under the age of sixty with known medical conditions is at odds with the agency's failure to grant exemptions to pilots over the age of sixty, and that this inconsistency conflicts with *Airmark*. Pet. 16-17. This contention is incorrect.

Petitioners' premise that pilots with known medical conditions are indistinguishable from pilots over 60 is un-

⁴ For the same reason, petitioners' reliance on decisions in accord with *Airmark* (see Pet. 14-15 & n.3) is also misplaced.

founded. Pilots can only obtain a special issuance of medical certificate if the agency has determined that a known medical disease or deficiency can be clearly identified and monitored, and then only if the agency has approved adequate means for assessment and surveillance of the condition for any adverse change. Pet. App. 68a. On the other hand, after examining and reexamining the medical evidence available, the Administrator has determined that medical technology does not yet allow reliable predictions regarding the physical consequences of the aging process (including the risk of sudden incapacitation) as to one particular individual pilot. *Id.* at 69a. Thus, there is a clear distinction between these two contexts.

In any event, the Seventh Circuit is the only court that has directly addressed the issue of whether the FAA's denials of petitions for exemptions to the age sixty rule is inconsistent with the grant of exceptions of medical applications. In *Starr v. FAA*, the court held that the FAA's granting of exemption to younger pilots suffering from specific medical problems did not make the failure to issue exemption to those over sixty unreasonable. The court explained:

The rationale for exemptions is to allow an administrator flexibility. Ruling that a liberal exemption policy for one set of circumstances requires such a policy in other circumstances deemed by the agency to be less suitable to safe exemption processes would result in an all-or-nothing policy of exemptions, with the possible effect of denying exemptions in all cases, and limiting the administrator's ability to provide optimum air safety in the public interest.

589 F.2d at 313.

In the case at bar, the Seventh Circuit has again upheld the FAA's distinction (Pet. App. 7a), and petitioners' claim does not warrant review.

CONCLUSION

The petition for a writ of certiorari should be denied.
Respectfully submitted.

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JAMES B. BUSEY, Administrator,

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On Petition For A Writ Of Certiorari To The United
States Court Of Appeals For The Seventh Circuit

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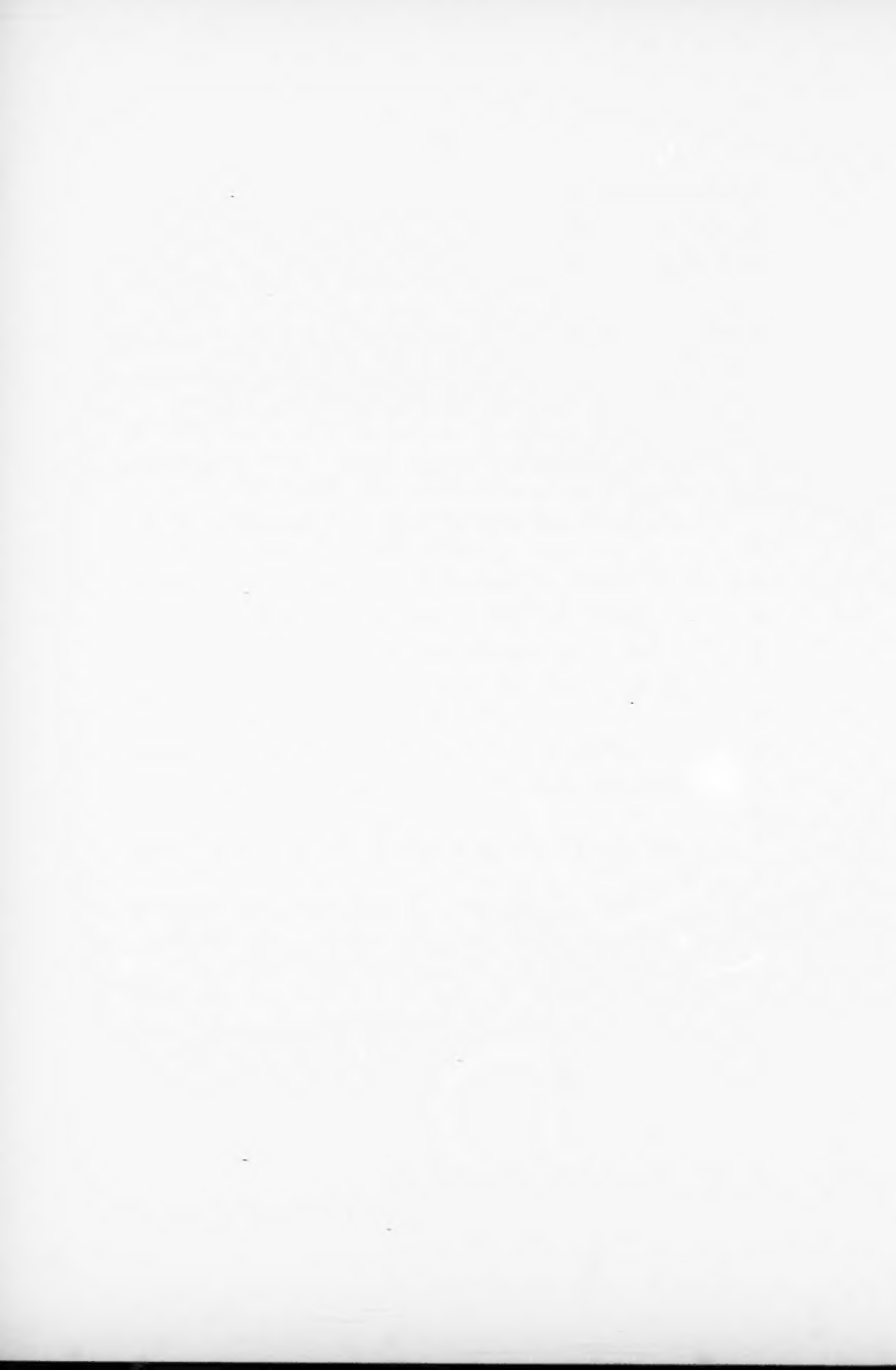
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JOHN H. BAKER, *et al.*,

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FEDERAL AVIATION ADMINISTRATION, and
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REPLY BRIEF OF PETITIONERS

This case presents an issue important to our national transportation policy: whether the FAA has all but unreviewable authority to refuse to grant a single exception to a rule which grounds all veteran commercial airline pilots on their sixtieth birthdays, regardless of individual health or qualifications. The majority opinion below effectively rendered agency denials of such exemptions forever unreviewable in the courts.

Respondent's opposition to the petition fails to confront the issue of whether the FAA can continue to refuse to grant any exemptions to its "age sixty rule," in light of the agency's duty to maintain "flexibility and adaptability" in the administration of its regulatory responsibilities,

particularly in the face of revolutionary advances in medical knowledge. *American Trucking Associations, Inc. v. Atchison, Topeka, and Santa Fe Ry. Co.*, 387 U.S. 397, 416 (1967). It defies comprehension that, after thirty years, the FAA professes to have learned nothing about disease detection or individual assessment techniques to enable selected airline pilots to continue their employment after age sixty on a case-by-case basis.

The FAA describes petitioners' requests for exemptions under 49 U.S.C. App. § 1421(c) and 14 C.F.R. § 11.25 as attempts to "circumvent" the age sixty rule (Opp. 7) and as "frontal attacks on [its] reasonableness." (*Id.*) This argument was made and rejected in *Aman v. FAA*, 856 F.2d 946, 949 n.2 (7th Cir. 1988). There, as here, the agency "presented no authority or logical argument for the proposition that an exemption must be denied if approval would cast doubt on the basis for a rule." *Id.*

The FAA's opposition is curiously silent about the state of isolation among government agencies in which the FAA finds itself on the issues presented here. The National Institute on Aging, National Institutes of Health, and the U.S. Equal Employment Opportunity Commission have spoken out publicly for many years in opposition to the FAA's age sixty rule and in strong support of the ability of modern medical science and aviation technology to evaluate the health and fitness of airline pilots as individuals rather than as members of a stereotyped group, consistent with the purposes of the Age Discrimination in Employment Act, 29 U.S.C. § 621.¹ See *Western Air Lines, Inc.*

¹ Testimony and submissions of T. Franklin Williams, M.D., Director, National Institute on Aging, National Institutes of Health. Age Discrimination and the FAA Age Sixty Rule, Hearing before the Select Committee on Aging, H.R. Comm. Pub. No. 99-533, 99th Cong., 1st Sess. 9, 134 (1985). See *Trans World Airlines, Inc. v. Thurston*, 469 U.S. 111, 123 n.17 (1985) (EEOC does not endorse age sixty rule).

v. Criswell, 472 U.S. 400, 407 (1985) (record "reveals that both the FAA and the airlines have been able to deal with the health problems of pilots on an individualized basis"). Illustrative of the FAA's adherence to outmoded principles is its fixation on the medical state of the art in the 1970s (Opp. 6-10) and particularly the decision in *Starr v. FAA*, 589 F.2d 307 (7th Cir. 1978). When *Starr* was decided, however, the FAA had not yet returned airline pilots to unrestricted service following heart attacks and bypass surgery.² Moreover, the *Starr* court warned the FAA to adhere to the "congressionally expressed concern that [the agency] keep abreast" of the medical state of the art, since "[d]eliberate disregard of new advances in medical testing standards that made it more readily feasible to measure the hazard person by person . . . might require a different result. . . ." *Id.* at 312.

I. FAA's Refusal To Consider Any Exemptions To The Age Sixty Rule Is Contrary To Statutory Intent And Agency Regulations.

FAA argues that, because the Federal Aviation Act provides that it " 'may grant' exemptions . . . in the public interest" (49 U.S.C. App. § 1421(c)), there is no "statutory entitlement" and "no statutory mandate to issue one." (Opp. 9) In urging that it be allowed to continue denying all exemptions for the next thirty years, as it has for the last thirty—"until it determines" to issue them (*id.*)—FAA fails to acknowledge: (1) its obligation to provide an effective waiver mechanism for special circumstances as a matter of constitutional and statutory duty;³ and (2) its

² See also *Gray v. FAA*, 594 F.2d 793 (10th Cir. 1979); *Keating v. FAA*, 610 F.2d 611 (9th Cir. 1979); and *Rombough v. FAA*, 594 F.2d 59 (2d Cir. 1979).

³ *Southwest Pennsylvania Cable TV, Inc. v. FCC*, 514 F.2d 1343, 1347 (D.C. Cir. 1975); *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

own regulations, which provide for the grant of exemptions when to do so “would not adversely affect safety” or would provide a “level of safety equal to that provided by the rule from which the exemption is sought.” 14 C.F.R. § 11.25. The FAA’s abandonment of its own regulations in this case compelled dissenting Judge Will to describe those regulations as a “fraud.” (Pet. App. 18a)

II. The Decision Of The Court Below Is In Conflict With The Law In Other Circuits Because It Permitted The FAA To Apply Different Decisional Criteria To Similar Exemption Requests.

Not only is the decision below in conflict with those in *Airmark Corp. v. FAA*, 758 F.2d 685, 691-95 (D.C. Cir. 1985), and in four other circuits (*See* Pet. 14-15), but it is also at odds with the Seventh Circuit’s decision in *Aman v. FAA*. In *Aman*, 856 F.2d at 957, the court noted that the deference to which the FAA was entitled was not “a license to issue inconsistent determinations.” Recognizing the FAA’s increased willingness to issue “special” exemptions to pilots under age sixty with all of the same diseases and disabilities which are claimed to disqualify age sixty pilots by their mere potential, the *Aman* court ordered the FAA to explain the “statutory justifications for these distinctions.” The court emphasized that, consistent with the teachings of *Airmark*, it was “essential that the construction of [the FAA’s] statutory responsibilities . . . make sense of these special issuances. . . .” *Id.*⁴

In response to the mandate in *Aman*, the FAA explained that its no-exemption policy has been enforced for thirty

⁴ The court described “special issuances” (exemptions) under 14 C.F.R. § 67.19 as the “functional equivalent of a second exemption mechanism.” *Aman*, 758 F.2d at 957.

years because of the risk of “sudden incapacitation.” (See Opp. 2-4, 8, 10-12) Conceding that it has granted “some”—in reality over 1,300—exemptions to airline pilots following treatment for myocardial infarction, coronary bypass surgery, stroke, loss of consciousness, chronic alcoholism and drug addiction, psychiatric disorder, and other permanent and progressive conditions, the FAA asserted that its “more flexible exemption policy for pilots under the age of sixty” was in the public interest because persons with “known medical disease or deficiency” could be “identified and monitored,” while apparently healthy and carefully examined sixty-year-olds could not. (Opp. 3, 12) FAA stated it knew more about heart disease and drug addiction than it did about aging, so it had greater confidence about the likelihood of incapacitation and the future health status of diseased pilots than it did for pilots reaching sixty. The agency adhered to this position despite evidence in the record of alcoholic relapses, subsequent heart attacks and strokes, and other later disqualifying events among the younger pilots. Moreover, the FAA never described the specific medical/psychologic protocols which allowed it to exempt pilots afflicted by progressive diseases with known risks of recurrence. Nor did it explain, in view of its claim that the *potential* of these same diseases justified denial of age sixty exemptions, why such disease-detection protocols used for pilots under sixty could not also evaluate and make reasonable predictions for healthy sixty-year-olds with equal or greater confidence.

Despite flaws in the FAA’s articulated distinction between the exemption standard applied to diseased pilots under sixty and healthy pilots over sixty, the majority below abdicated its review function and abandoned the *Aman* mandate by relieving the agency of its duty to apply consistent exemption criteria or provide a cogent explanation for a different standard. The FAA’s proffered

explanation for its different exemption standards based on age was not a cogent, logical explanation meeting the rule of law announced in *Airmark* and *Aman*. Contrary to the FAA's representation that the majority below "upheld the FAA's distinction" between the age sixty and "special" exemption standards, in fact it concluded that "[e]xactly how this distinction applies as a practical matter is not entirely clear to us. . . ." (Pet. App. 7a)⁵

In this Court, FAA argues that the *Airmark* requirement that federal agencies apply the same exemption policy to different petitioners was satisfied here by its consistent refusal to grant age sixty exemptions. In *Aman*, however, the court made clear that the *Airmark* prohibition on "inconsistent determinations" required FAA either to apply the same standard to age sixty exemptions as it applies to "special" medical exemptions, or to justify its refusal to do so consistent with the statute and agency regulations. 856 F.2d at 957.

While urging this Court to approve the standard of essential unreviewability created by the majority below, the FAA states that the rule is not "indelible" (Opp. 7), and that the agency has "continued to research and examine whether new advances in medical science can identify individual pilots over the age of sixty who do not pose a risk. . . ." (*Id.*) While no such research has ever before been clearly identified, the agency now discloses that it

⁵ Respondent cites *Starr v. FAA*, 589 F.2d at 313 to support its position that merely because it has a "liberal exemption policy" for diseased and disabled pilots under age sixty does not require it to liberalize its consideration of age sixty rule exemption petitions. (Opp. 12) The *Starr* analysis was clearly superseded in *Aman*, however, when the court required FAA to explain the "statutory justifications for [its] distinction[]" between the increased willingness to grant "special" exemptions "to pilots otherwise disqualified by episodes of heart disease or alcoholism" and the denial of all age exemptions. 856 F.2d at 957.

has "reviewed" two studies. (Opp. 7, n.3) However, the principal investigators of the first—the Navy's "1000 Aviator Study"—have strongly supported the grant of age sixty exemptions.⁶ The authors of the second, a panel assembled by the Institute of Medicine for the National Institutes of Health in 1981, have stated that "age alone is not the best predictor of risk" and that "risk-factor profiles and a more thorough testing of high risk individuals are adequate to identify those pilots whose health status would represent a threat to safety because of possible acute incapacitation."⁷

In denying the exemptions at issue here, the FAA relied "heavily" (Pet. App. 4a) on a 1983 report which purported to show that general aviation pilots over age sixty had relatively high accident rates, while pilots in their fifties had the lowest accident rate of all age groups. (See Pet. App. 53a-58a, 66a-67a) Representing to this Court that "older pilots were more prone to accidents" (Opp. 10), the FAA fails to mention that the report on which it relies was determined to have "serious flaws," and that it "significantly understated" the accident rate "for all pilots under age sixty" (the "jump in accidents . . . simply looks too large to be credible"). (Pet. App. 5a)

⁶ J.A. 447-53, R. 315 (June 25, 1986 letter to FAA docket from E. York, M.D., and July 7, 1986 letter to FAA from N.R. MacIntyre, M.D.).

⁷ R. 316 at F-153, F-160. That same report, which FAA claims to have reviewed so as not to "shirk[] its duty" (Opp. 7), found that "[n]o accidents were attributed to incapacitation" during the period studied (F-56), and that cardiovascular disease represented only 18 percent (12 of 67 reported incidents) of the incapacitations reported in the relevant period. (F-57) Data presented in the report indicate that airline pilots in their 50s have the lowest accident/incident rate of all age groups (F-50), despite the fact that they "tend to fly the largest and fastest airplanes." (Opp. 6)

The FAA apparently believes that it softens the impact of its no-exemption policy by noting that the age sixty rule does not apply to commuter, corporate, and private pilots, or to airline flight engineers or navigators (a position which no longer exists). (Opp. 6, n.2) This, however, only highlights the hopelessly inconsistent standards the agency has applied. Clearly, if the physical incapacitation/deterioration rationale for an age sixty cut-off had medical validity, the agency would have long since applied the same rule to all aviation operations in which air safety is at stake. It is worth noting that the FAA applies no upper age limitation to its own pilots, who command large airline-type aircraft. *EEOC v. Boeing Co.*, 843 F.2d 1213, 1216 (9th Cir.), *cert. denied*, 488 U.S. 889 (1988). Indeed, with the recent lifting of all age limits for astronauts by the National Aeronautics and Space Administration, a pilot over age sixty can fly national security payloads to the moon, but cannot fly a DC-9 to Cleveland.

III. If FAA Is Allowed To Continue Denying Exemptions Until Such Time As It Is "Convinced" To Grant One, A Standard Of Unlimited Agency Discretion And Unreviewability Will Have Been Established.

The FAA asks this Court to grant it unreviewable discretion to deny exemptions so long as it is "not convinced." (Opp. 10) It requests that the Court not "second guess the agency's evaluation of the medical evidence," but instead defer to its "policy decision" to deny all exemptions. (Opp. 9-10) This Court has stated that it will defer to agency expertise when it is demonstrated but cautioned that, without strict and demanding guidelines, such "expertise . . . can become a monster which rules with no practical limits on its discretion." *Burlington Truck Lines v. United States*, 371 U.S. 156, 167 (1962).

The agency declares that "there will be no exemption unless and until the FAA determines that medical science can assess the individual pilots' risks of sudden incapacitation. . . ." (Opp. 11) Yet, while the FAA is "blindly adhering to an outdated rule" (*Starr*, 589 F.2d at 314), there is a broad consensus in the medical community, reflected in the record below, that the risk of heart attack and other disorders can be assessed with a high degree of confidence on an individual basis. (*See e.g.*, J.A. 457, submission of President-Elect of the American Heart Association).

The FAA cites *Gray v. FAA*, 594 F.2d 793 (10th Cir. 1979) for the proposition that, "[a]t some point, the state of the medical art may become so compellingly supportive . . . that it would be an abuse of discretion not to grant an exemption." (Opp. 8) That time has come. The record below, consisting of over 400 separate submissions from scientists, physicians, and aviation experts, contain virtually unanimous support for the grant of exemptions to FAA's onerous rule.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted,

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